

SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL

THIS WORK WILL CONSIST OF REMOVING ALL VISIBLY SPALLED AREAS OF THE BOTTOM DECK FLOOR OF STRUCTURE(S) SUM-76-1230, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1518, SUM-76-1521, SUM-76-1531, SUM-76-1631, AND SUM-76-1648. WITHOUT SOUNDING. AFTER SPALLED CONCRETE AREAS HAVE BEEN REMOVED, REMOVAL AREAS WILL BE SEALED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

CONCRETE SPALL REMOVAL WILL BE PAID FOR AT THE UNIT BID PRICE FOR SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL. THIS PRICE WILL INCLUDE THE COST OF LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SY 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SY

CORRECTING BRIDGE IDENTIFICATION SIGN NUMBERS:

SOME OF THE EXISTING BRIDGE NUMBER SIGNS HAVE INCORRECT BRIDGE NUMBERS ON THEM. THE FOLLOWING BRIDGE NUMBERS ARE THE CORRECT ONES AND WILL BE USED ON THE NEW BRIDGE IDENTIFICATION SIGNS.

STRUCTURE SUM-76-1236 (SFN: 7706251) THE EXISTING SIGN SHOWS 1235. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1236.

STRUCTURE SUM-76-1518 (SFN: 77006650) THE EXISTING SIGN SHOWS 15.19. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1518.

STRUCTURE SUM-76-1631 (SFN: 7706693) THE EXISTING SIGN SHOWS 16.31. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1631.

STRUCTURE SUM-76-1695 (SFN: 7706758) THE EXISTING SIGN SHOWS 16.98. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1695.

STRUCTURE IDENTIFICATION SIGNS

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS FOR THE FOLLOWING STRUCTURES:
 SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774 AND SUM-241-1172

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR EACH APPROACH:

- ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SQ FT
- ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 7.5 FT
- ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 1 EACH
- ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 1 EACH

ITEM 848 - MICRO-SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

ITEM 848 - MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN

ITEM 848 - FULL DEPTH REPAIR, AS PER PLAN

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRO DEMOLITION" WITH THE FOLLOWING REVISIONS:

THE THICKNESS OF THE CONCRETE OVERLAY REMOVED, ASPHALT WEARING COURSE REMOVED, PROPOSED OVERLAY, AND THE DEPTH OF HYDRODEMOLITION SHALL BE AS SPECIFIED IN THE PLANS.

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL LINE.

(SEE 848.12) THE COMPONENTS OF THE MICRO-SILICA MODIFIED CONCRETE SHALL BE PROPORTIONED AS FOLLOWS.

CONCRETE TABLE
 QUANTITIES PER CUBIC YARD
 AGGREGATES (SSD)

AGGREGATE TYPE	FINE AGGRE (LB)	#8 COARSE AGGRE (LB)	AGGRE TOTAL (LB)	CEMENT CONTENT (LB)	MICRO-SILICA (LB)	WATER TO CEMENTITIOUS RATIO	AIR CONTENT ±2%	"FIBER (1 1/4" POLYPROPYLENE) (LB)
GRAVEL	1410	1430	2840	600	50	0.4	8	1
LIMESTONE	1410	1450	2860	600	50	0.4	8	1
SLAG	1300	1350	2650	600	50	0.4	8	1

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

** FIBER MESH SHALL BE 100% VIRGIN POLYPROPYLENE IN A FIBRILLATED-NETWORK FORM AND SHALL BE 1/4" IN LENGTH.

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, MICRO-SILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED. FIBER MESH WEIGHTS NOT INCLUDED IN MIX DESIGN.

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED BY ASTM C127

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

(SEE 848.21) THE FINAL DECK SOUNDING MAY TAKE PLACE WITHIN 24 HOURS OF A RAIN, AND THE DECK DOES NOT HAVE TO BE COMPLETELY DRY.

(SEE 848.23) FULL DEPTH REPAIR IS NOT REQUIRED IF LESS THAN ONE HALF OF THE DECK ORIGINAL CONCRETE THICKNESS IS SOUND.

(SEE 848.29) THE WET CURE TIME IS REDUCED FROM 72 HOURS TO 24 HOURS OR UNTIL A BEAM BREAK OF 600 PSI IS ACHIEVED, WHICHEVER IS GREATER. AFTER THE 24 HOUR WET CURE, THE FINISHED OVERLAY SURFACE SHALL BE CURED BY SPRAYING A UNIFORM APPLICATION OF CURING MATERIAL OF 705.07, TYPE 1 OR 1D, AS PER CMS 511.14 METHOD (B) MEMBRANE CURING. IF THE CURING COMPOUND CAN NOT BE PLACED WITHIN THE SAME SHORT TERM CLOSURE PERIOD AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY, AND SHALL, AT THE NEXT AVAILABLE SHORT TERM CLOSURE PERIOD, APPLY THE MEMBRANE CURING COMPOUND.

(SEE 848.29) TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL AFTER THE COMPLETION OF THE 24 HOUR WET CURE, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 600 PST (4.2 Mpa).

(SEE 848.30) THE OVERLAY SURFACE EVAPORATION RATE REQUIREMENTS ARE IN EFFECT FROM 9:30 AM TO 11:00 PM. THEY ARE NOT IN EFFECT FROM 11:00 PM TO 11:00 AM.

(SEE 848.31) FOR EACH PHASE, THE CONTRACTOR SHALL PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS. THE DEPARTMENT WILL PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS, AND THE MODULUS OF RUPTURE FOR EACH BEAM UNTIL THE MODULUS OF RUPTURE OF THE TWO TESTS IS NOT LESS THAN 650 PSI (4.5 Mpa). TRAFFIC IS ALLOWED ON THE OVERLAY AT 600 PSI (4.5 Mpa).

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

ITEM SPECIAL - VANDAL PROTECTION FENCE 6' STRAIGHT, COATED FABRIC

PRIOR TO ORDERING MATERIALS THE CONTRACTOR SHALL LAYOUT THE POST LOCATIONS AND THE PROJECT ENGINEER SHALL APPROVE THE POST SPACING TO BE USED. THE POST SPACING SHALL BE AS PER STANDARD DRAWING VPF-1-90. THE FENCE SHALL NOT EXTEND PAST THE END OF THE DECK (ONTO THE APPROACH SLAB PARAPET). AFTER THE REMOVAL OF THE EXISTING VANDAL FENCE, ALL BOLT HOLES SHALL BE GROUTED AND NEW POST LOCATIONS SHALL BE A MINIMUM OF 1 FOOT FROM EXISTING POST LOCATIONS.

POST SECTION PS-4 AND BASE PLATE BP-5 SHALL BE USED.

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DESIGN AGENCY: ODOT --- DISTRICT 4
 PLANNING AND ENGINEERING

DATE: 8/7/2015
 REVIEWED: LMP
 STRUCTURE FILE NUMBER

DRAWN: NRC
 REVISIONS

DESIGNED: NRC
 CHECKED: LMP

STRUCTURE GENERAL NOTES
 SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R, SUM-76-1189, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774, & SUM-241-1172

SUM-76/241-VAR/11.72
 PID No. 77876

4 / 16
 77
 103

**ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.:
VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)**

DESCRIPTION:

THIS ITEM WILL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECKS, APPROACH SLABS AND TOPS OF THE BACKWALLS, INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, BONDING COAT, AND THE MIXING, PLACING, FINISHING, CURING, COMPRESSIVE STRENGTH TESTING, AND SEALING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

RESTRICTIONS:

THE VES-LMC WILL NOT BE PLACED WHEN RAIN IS FORECAST WITHIN THE PERIOD OF TIME WHEN THE REPAIR WILL BE PERFORMED, INCLUDING PREPARATION, INSTALLATION OF THE PATCH AND CURING. IF RAIN OCCURS DURING THE PLACING OF THE MATERIAL, ALL OPERATIONS WILL CEASE. DURING DELAYS IN THE PATCH PLACEMENT OPERATIONS OF MORE THAN 10 MINUTES, THE WORK FACE OF THE PLACED PATCH MATERIAL AND ANY BONDING GROUTED AREAS WILL BE TEMPORARILY COVERED WITH WET BURLAP. IF AN EXCESSIVE DELAY IS ANTICIPATED, A BULKHEAD WILL BE INSTALLED AT THE WORK FACE AND THE PATCHING PLACEMENT OPERATION TERMINATED

THE VES-LMC PATCHING MATERIAL WILL BE PLACED ONLY WHEN THE LOCAL AMBIENT TEMPERATURE IS ABOVE 45°F AND IS FORECAST TO REMAIN ABOVE 45°F FOR THE CURING PERIOD. THE TEMPERATURE AT THE PATCH SURFACE WILL BE MAINTAINED ABOVE 35°F UNTIL THE CURING PERIOD IS COMPLETE.

DO NOT BEGIN OPERATIONS IF EVAPORATION RATES ARE PREDICTED TO BE MORE THAN 0.1 POUND PER SQUARE FOOT PER HOUR AS DETERMINED ACCORDING TO CMS 511.10, FIGURE 1, ACI 308, WITHIN 12 HOURS OF COMMENCEMENT.

UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, PATCHES WILL NOT BE PLACED ADJACENT TO A PREVIOUS PATCH WHICH HAS CURED FOR LESS THAN 4 HOURS.

IF PLACEMENT OF PATCHES IS TO BE MADE AT NIGHT, THE CONTRACTOR WILL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR WORK AREA. THE PLAN WILL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS WILL BE DIRECTED SO THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

REMOVAL OF UNSOUND CONCRETE:

THE ENGINEER WILL SOUND THE WEARING SURFACE AND BACKWALL TOPS AND OUTLINE THE AREAS TO BE REMOVED. SOUNDING MAY HAVE TO BE DELAYED UNTIL THE DECK IS SUFFICIENTLY DRY TO PERMIT DETECTION OF ALL AREAS OF DELAMINATION. BACKWALL REMOVAL AND DEPTH WILL BE AS DIRECTED BY THE ENGINEER AND WILL NOT GO BELOW THE EXISTING APPROACH SLAB SEAT. THE PERIMETER OF ALL REMOVAL AREAS WILL BE SAWED TO A DEPTH OF 2 INCHES TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL. SAW CUTS WILL NOT EXTEND BEYOND THE LIMITS OF THE PATCH. COOLING WATER FROM WET SAWING AND DUST FROM DRY SAWING WILL NOT BE ALLOWED TO CONTAMINATE THE EXPOSED PATCH HOLES. ALL PATCHES OTHER THAN SOUND CONCRETE AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE WILL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING, AND DRESSING, OR HYDRODEMOLITION (AS PER SS848). THE REMOVAL OF AN UNSOUND EXISTING CONCRETE OVERLAY MAY BE PERFORMED AS PER SS847.17. CHIPPING HAMMERS WILL NOT BE HEAVIER THAN THE NORMAL 35-POUND CLASS AND WILL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK.

CONCRETE WILL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING REINFORCING STEEL, WHERE THE BOND BETWEEN THE CONCRETE AND PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE WILL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3#4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE, REINFORCEMENT WHICH HAS BECOME LOOSE WILL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE.

SURFACE PREPARATION:

CLEANING WILL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT OR THE PATCHING MATERIAL. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WILL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO PATCHING BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA WILL NOT BE ALLOWED. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE WILL BE PREVENTED BY PLACEMENT OF A CLEAN 4-MIL POLYETHYLENE SHEET (OR ANY OTHER COVERINGS AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING. WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR WILL PROVIDE ADEQUATE SUPPORT FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE CONCRETE MIXER, OR WILL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER THE PATCH LOCATIONS.

MATERIALS:

MATERIALS WILL CONFORM TO THE FOLLOWING REQUIREMENTS:

FINE AGGREGATE (NATURAL SAND)	703.02 (NOTE 1)
COARSE AGGREGATE (NO. 8)	703.02 (NOTE 1)
RAPID HARDENING HYDRAULIC CEMENT	(NOTE 2)
WATER	499.02
LATEX EMULSION	55953
CURING MATERIAL	705.05, OR 705.06, WHITE OPAQUE
REPLACEMENT REINFORCING STEEL	709.00

POSSOLONIC MATERIAL OR PORTLAND POZZOLAN CEMENTS WILL NOT BE USED.

ANTI-FOAM ADDITIVES AS RECOMMENDED BY THE LATEX EMULSION MANUFACTURER MAY BE REQUIRED IF THE CONCRETE MIXTURE ENTRAINED AIR IS ABOVE THE SPECIFIED AMOUNT.

AIR-ENTRAINING ADMIXTURES WILL NOT BE USED

A SET CONTROL IN ACCORDANCE WITH THE CEMENT MANUFACTURER'S RECOMMENDATION MAY BE CONSIDERED.

ADMIXTURES CONTAINING CALCIUM CHLORIDE WILL NOT BE USED.

(NOTE 1): DELETRIOUS MATERIAL WILL NOT EXCEED ONE HALF THE REQUIREMENTS FOR THE SUPERSTRUCTURE AGGREGATE, AND THE SODIUM SULFATE SOUNDNESS LOSS WILL NOT EXCEED THAT SPECIFIED FOR SUPERSTRUCTURE CONCRETE IN 703.02.

(NOTE 2): CEMENT WILL BE APPROXIMATELY 1#3 CALCIUM SULFOALUMINATE (C4A3S) AND 2#3 DICALCIUM SILICATE (CS2) OR OTHER HYDRAULIC CEMENT THAT WILL PROVIDE A LATEX MODIFIED CONCRETE THAT MEETS THE PHYSICAL REQUIREMENTS FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE LISTED BELOW:

1. COMPRESSIVE STRENGTH, MINIMUM, CONCRETE ASTM C39:
3 HOURS: 2500 PSI
1 DAY: 3500 PSI
7 DAYS: 5000 PSI

2. PRIOR TO PLACING PATCHES THE CONCRETE WILL DEMONSTRATE THAT THE CONCRETE MIXTURE WILL OBTAIN A COMPRESSIVE STRENGTH OF AT LEAST 2500 PSI WITHIN THE CURING PERIOD AND AT THE CURING TEMPERATURES IN WHICH THE PATCHES WILL BE PLACED.

3. PERMEABILITY, MAXIMUM AT 28 DAYS, AASHTO T277: 1000 COULOMBS. PERMEABILITY SAMPLES WILL BE MOIST CURED 2 DAYS IN THE MOLDS (1 DAY AT THE JOB SITE AND 1 DAY IN THE LAB). AIR CURED 5 DAYS IN THE MOLDS IN THE LABORATORY, AND 21 DAYS OUT OF THE MOLDS AT 100°F AIR TEMP.

4. BOND STRENGTH, MINIMUM AT 7 DAYS, ASTM C1583 USING TYPE 1, SELF-ALIGNMENT ADHESION TESTER PER ASTM D4541 = 150 PSI.

(NOTE 3): THE LATEX EMULSION WILL BE PROTECTED FROM FREEZING AND PROLONGED EXPOSURE TO TEMPERATURES IN EXCESS OF 85°F. EMULSIONS IN STORAGE FACILITIES WILL BE RE-CIRCULATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

PROPORTIONING AND MIXING:

ALL MIXING OF MATERIALS WILL BE DONE ON SITE IN A CONTINUOUS MOBILE MIXER. PRIOR TO EACH DAY'S PLACEMENT, EACH MIXER WILL BE CHECKED TO ASSURE THAT SPECIFIED AIR CONTENT, SLUMP, AND YIELD HAVE BEEN ATTAINED. TRIAL CONCRETE WILL NOT BE INCORPORATED INTO THE WORK. PROPORTIONING AND ALL OTHER REQUIRED CHARACTERISTICS OF THE MIX WILL BE ADJUSTED OFF THE DECK BEFORE PLACEMENT OF THE PATCHES BEGIN.

THE MIXTURE WILL CONSIST OF A WORKABLE MIXTURE OF UNIFORM COMPOSITION AND CONSISTENCY WITH THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD (DRY WEIGHT):

QUANTITIES OF MATERIALS PER CUBIC YARD (DRY WEIGHT):

TYPE OF COARSE AGGREGATE	FINE AGGREGATE (LB)	COARSE AGGREGATE (LB)	CEMENT (LB)	LATEX EMULSION (GAL)	MAX. NET WATER (GAL)
GRAVEL	1645	1300	658	24.5	17.5
LIMESTONE	1645	1315	658	24.5	17.5
SLAG	1645	1140	658	24.5	17.5

SLUMP: 4 TO 6 INCHES

AIR CONTENT OF PLASTIC MIX WILL NOT EXCEED 7 PERCENT

NOTE: THE SPECIFIC GRAVITY USED FOR DETERMINING THE ABOVE WEIGHTS ARE: NATURAL SAND 2.62, GRAVEL 2.62, LIMESTONE 2.65, AND SLAG 2.30.

NOTE: THE DRY WEIGHTS ARE APPROXIMATE. THIS PROPORTION SHOULD PRODUCE GOOD WORKABILITY, BUT DUE TO GRADATION VARIABILITY, THE FINE AGGREGATE CONTENT MAY BE INCREASED WITH APPROVAL BY THE ENGINEER, AS MUCH AS 8 PERCENT BY WEIGHT IF THE COARSE AGGREGATE IS REDUCED AN EQUAL VOLUME.

NOTE: THE SLUMP WILL NOT BE MEASURED UNTIL AFTER THE CONCRETE HAS BEEN DISCHARGED FROM THE MIXER AND LEFT UNDISTURBED FOR 4 TO 5 MINUTES. THE WATER CONTENT MAY BE ADJUSTED TO CONTROL THE SLUMP WITHIN THE PRESCRIBED LIMITS.

CONTINUOUS MOBILE MIXER:

REQUIREMENTS FOR CONTINUOUS MOBILE MIXERS FOR LATEX MODIFIED CONCRETE ARE AS FOLLOWS: THE PROPORTIONING AND MIXING EQUIPEMENT WILL BE AN INTEGRAL MOBILE UNIT HAVING CAPACITY AND CONTINUOUS MIXING CAPABILITY TO PERMIT THE FINISHING OPERATIONS TO PROCEED AT A CONSTANT RATE SO THAT THE FINAL FINISHING CAN BE COMPLETED PRIOR TO THE FORMATION OF A PLASTIC FILM ON THE VES-LMC SURFACE. IT WILL CONSISTENTLY PRODUCE UNIFORMLY BLENDED MIXTURE WITH THE SPECIFIED AIR CONTENT AND SLUMP LIMITS.

THE MIXER WILL ALSO:

- BE CAPABLE OF PRODUCING NOT LESS THAN 6 CUBIC YARDS OF VES-LMC WITHOUT RECHARGING
- BE EQUIPPED WITH A RECORDING METR WITH A TICKET PRINTOUT DEVICE TO RECORD AN INDICATION OF THE CEMENT QUANTITY BEING INTRODUCED INTO THE MIX. THE METERING DEVICE WILL BE ACCURATE WITHIN A TOLERANCE OF -1 TO +3 PERCENT.
- BE EQUIPPED WITH A LATEX METERING DEVICE TO INDICATE VOLUME DISPENSED. THE METERING DEVICE WILL BE ACCURATE TO WITHIN A TOLERANCE OF -1 TO +2 PERCENT. IN ADDITION THE LATEX TANK WILL HAVE A STAND PIPE MARKED GALLONS.
- BE EQUIPPED WITH A WATER FLOW INDICATOR AND HAVE A WATER FLOW CONTROL THAT IS READILY ADJUSTABLE TO PROVIDE FOR MINOR VARIATIONS IN AGGREGATE MOISTURE CONTENT. THE FLOW INDICATOR WILL BE ACCURATE WITHIN A TOLERANCE OF +1 PERCENT IN THE RANGE OF EXPECTED USE.
- BE EQUIPPED WITH A CONTROL TO REGULATE THE QUANTITY OF EACH OF THE VES-LMC COMPONENTS TO PERMIT THE PRODUCTION OF THE MIX HAVING THE SPECIFIED COMPOSITION. TO ENSURE THAT THE MIXER CAN ACCURATELY PROPORTION AND BLEND ALL COMPONENTS OF THE VES-LMC ON A CONTINUOUS OR INTERMITTENT BASIS. THE MIXER WILL BE CALIBRATED PRIOR TO THE PRODUCTION OF THE MATERIAL.
- THE ENGINEER MAY REQUIRE RE-CALIBRATION OF THE CEMENT, LATEX AND WATER METERING DEVICES AS HE DEEMS NECESSARY.
- BE CAPABLE OF DISCHARGING MIXED VES-LMC THROUGH A CONVENTIONAL CHUTE DIRECTLY IN FRONT OF THE FINISHING MACHINE.
- BE KEPT CLEAN, FREE OF PARTIALLY DRIED OR HARDENED MATERIALS, AND PROPERLY OPERATED AT ALL TIMES.

PLACING, CONSOLIDATING AND FINISHING:

IMMEDIATELY PRIOR TO PLACING THE PATCHES, CLEAN AND WET ALL EXPOSED CONCRETE SURFACES.

CONTINUOUSLY FOG THE VES-LMC MATERIAL FROM THE TIME OF PLACING UNTIL COVERED WITH WET BURLAP. APPLY THE FOG UNIFORMLY OVER THE ENTIRE SURFACE OF THE PATCH AREA WITHOUT PRODUCING STANDING WATER.

SCREEDING:

THE PATCHING MATERIAL WILL BE PLACED, CONSOLIDATED, AND FINISHED TO THE ADJACENT GRADE. PATCHES EXCEEDING 50 SQ FT (4.6 SQ M) WILL BE LEVELED AND CONSOLIDATED WITH A MECHANICAL VIBRATING SCREED. SMALLER PATCHES WILL BE HAND VIBRATED AND LEVELED WITH A STRAIGHTEDGE. THE SCREED WILL BE PLACED PARALLEL TO THE BRIDGE CENTERLINE SO THAT THE DECK PROFILE REMAINS CONSISTENT WITH THE WORN SURFACE.

DO NOT ADD WATER TO AID THE FINISHING AND AN EVAPORATION RETARDANT MAY NOT BE USED.

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED THEY WILL BE TEXTURED IN ACCORDANCE WITH 451.09.

SUM-76/241- VAR / 11.72 PID No. 77876	STRUCTURE GENERAL NOTES SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R, SUM-76-1189, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1303, SUM-76-1332, SUM-76-1512, SUM-76-1512, SUM-76-1607, SUM-76-1612, SUM-76-1616, SUM-76-1621, SUM-76-1631, SUM-76-1646, SUM-76-1646, SUM-76-1695, SUM-76-1714, & SUM-241-1172	DESIGNED	NRC	CHECKED	LMP
		DRAWN	NRC	REVISED	
		REVIEWED	LMP	DATE	8/7/2015
				DESIGN AGENCY	ODOT --- DISTRICT 4
					PLANNING AND ENGINEERING

THE CONTRACTOR WILL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A STRAIGHTEDGE. THE STRAIGHTEDGE WILL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH THE ENDS RESTING ON THE EXISTING WEARING SURFACE ADJACENT TO THE PATCH AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET (3 MM IN 3 M) WILL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE WILL BE RECHECKED.

CURING:

COVER THE FINISHED PATCHED SURFACES WITH A SINGLE LAYER OF CLEAN WET BURLAP AND COVER THE BURLAP WITH A 4-MIL WHITE OPAQUE POLYETHYLENE FILM FOR A MINIMUM OF 4 HOURS FOLLOWED BY A MEMBRANE CURE PER 511.17 METHOD (B).

ADEQUATE PRECAUTIONS WILL BE TAKEN TO PROTECT THE FRESHLY PLACED VES-LMC FROM RAIN.

THE CONTRACTOR WILL SUPPLY A PROPERLY CALIBRATED IMPACT REBOUND HAMMER TO VERIFY THAT THE PATCHES HAVE REACHED 3000 PSI COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC.

INSPECTION AND SOUNDING OF CONCRETE PATCHES:

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS WILL BE SOUNDED. ALL DELAMINATED AREAS WILL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE. ALL PATCHES WHICH ARE SOUND BUT SHOW SIGNS OF CRACKING WILL BE SEALED AND THE PERIMETER OF ALL PATCHES WILL ALSO BE SEALED WITH GRAVITY FED RESIN.

ALL SOUNDING AND REPLACEMENT OF REJECTED AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

METHOD OF MEASUREMENT:

PAYMENT WILL BE MADE AT THE CONTRACTOR PRICE PER CUBIC YARD FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) WHICH WILL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK INCLUDING REMOVAL AND DISPOSAL OF THE EXISTING MATERIAL.

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)

MAKE ONE OR MORE, ON CUBIC YARD, TRIAL BATCHES OF THE VES-LMC MATERIAL AT LEAST 14 DAYS PRIOR TO THE MATERIAL BEING PLACED. DEMONSTRATE THE ABILITY TO ACHIEVE THE REQUIREMENTS OF THE MATERIAL AS PER THE PLAN NOTE.

PAYMENT WILL BE MADE AT THE LUMP SUM CONTRACT PRICE FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) WHICH WILL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

REVIEWED
LMP
DATE
8/7/2015
STRUCTURE FILE NUMBER

DRAWN
NRC
REVISER
DESIGNED
NRC
CHECKED
LMP

STRUCTURE GENERAL NOTES
SUM-76-0913, SUM-76-0956, SUM-76-1179, SUM-76-1194, SUM-76-1199, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1303, SUM-76-1332, SUM-76-1337, SUM-76-1512, SUM-76-1516, SUM-76-1521, SUM-76-1531, SUM-76-1646, SUM-76-1695, SUM-76-1714, & SUM-241-1172

**SUM-76/241-
VAR / 11.72**
PID No. 77876

6 / 16

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103

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CALC: NRC DATE: 6/1/2015
 CHECKED: LMP DATE: 8/10/2015

ESTIMATED QUANTITIES

BRIDGE NO. / STRUCTURE FILE NO.												ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET	
SUM-76-0914 7703481 03/IMS/BR	SUM-76-0956 7703457 03/IMS/BR	SUM-76-0966 7703392 03/IMS/BR	SUM-76-1179L 7706154 03/IMS/BR	SUM-76-1179R 7706189 03/IMS/BR	SUM-76-1199 7706219 03/IMS/BR	SUM-76-1230 7706243 02/BRO/BR	SUM-76-1236 7706251 03/IMS/BR	SUM-76-1246 7706286 03/IMS/BR	SUM-76-1265 7706308 03/IMS/BR	SUM-76-1273 7706332 03/IMS/BR	SUM-76-1296 7706367 03/IMS/BR						
			LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	201	11000		CLEARING AND GRUBBING		
LUMP	LUMP	LUMP										202	11201		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2/16	
									10			203	40000	CY	BORROW		
7870	9591	6240										509	10001	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2/16	
400	500	300	50	50								509	20001	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	2/16	
552	674	440										510	10000	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		
			10	10								511	81100	FT	CONCRETE, MISC.: PARAPET REPAIR	2/16	
			25	25	110	84	20	50	80	120	90	512	10100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	3/16	
						2113					7110	2112	512	10400	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
					110								512	74000	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
											4	513	95030	EACH	STRUCTURAL STEEL, MISC.: REPLACEMENT OF DAMAGED CROSSFRAMES	3/16	
							21	21				514	27700	SF	FIELD PAINTING, MISC.: REPAIR PAINTING	3/16	
							150					516	01301	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	3/16	
			150	150	250	200	100	200	150	350	200	519	11101	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	3/16	
36	44	28										SPEC	51911900	CY	PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	5/16	
						22					36	32	SPEC	51912304	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	
LUMP	LUMP	LUMP											SPEC	51960000		PATCHING CONCRETE STRUCTURE MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	6/16
						50			50	50	50		SPEC	53000800	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL	4/16
									10				601	26000	CY	DUMPED ROCK FILL, TYPE B	
			7.5	7.5	15	15	7.5	7.5	15	15	15		630	02100	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
			1	1	2	2	1	1	2	2	2		630	80100	SF	SIGN, FLAT SHEET, 730.20	
				1		2		1	2	1			630	84900	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
				1		1		1	1	1			630	86002	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			75	75	150	100	50	100	100	250	150		843	50000	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	
			538	670				448	1836	7090			848	10001	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1 1/2")	4/16
			538	670				448	1836	7090			848	20001	SY	SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN	4/16
			45	56				38	153	591			848	30001	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	4/16
			17	21				14	56	213			848	50000	SY	HAND CHIPPING	
			LUMP	LUMP				LUMP	LUMP	LUMP			848	50100		TEST SLAB	
			1	1				1	1	1			848	50201	CY	FULL DEPTH REPAIR, AS PER PLAN	4/16

DESIGN AGENCY: ODOT --- DISTRICT 4
 PLANNING AND ENGINEERING

DATE: 8/7/2015
 REVIEWED: LMP
 STRUCTURE FILE NUMBER

DESIGNED: NRC
 CHECKED: LMP

DRAWN: NRC
 REVISED:

STRUCTURE ESTIMATED QUANTITIES
 SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R,
 SUM-76-1199, SUM-76-1230, SUM-76-1246, SUM-76-1265, SUM-76-1273, & SUM-76-1296

SUM-76/241-VAR/11.72
 PID No. 77876

7/16

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CALC: NRC DATE: 6/1/2015
 CHECKED: LMP DATE: 8/10/2015

ESTIMATED QUANTITIES

BRIDGE NO. / STRUCTURE FILE NO.												ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET
SUM-76-1303J 7706383 03/IMS/BR	SUM-76-1332 7706421 03/IMS/BR	SUM-76-1407 7706480 02/BRO/BR	SUM-76-1512 7706545 03/IMS/BR	SUM-76-1518 7706650 03/IMS/BR	SUM-76-1521 7706634 03/IMS/BR	SUM-76-1531 7706669 03/IMS/BR	SUM-76-1631 7706693 03/IMS/BR	SUM-76-1648 7706723 03/IMS/BR	SUM-76-1695 7706758 03/IMS/BR	SUM-76-1774 7706812 03/IMS/BR	SUM-241-1172 7709315 04/NHS/BR					
LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	201	11000		CLEARING AND GRUBBING	
							520					202	75260	FT	VANDAL PROTECTION FENCE REMOVED	
			20									202	98200	FT	REMOVAL MISC.: CHANNEL CLEANOUT	2/16
						3				10		203	40000	CY	BORROW	
		100					50	50				509	20001	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	2/16
		29					4	4				511	71100	CY	CONCRETE, MISC.: BACKWALL REPAIR	3/16
		50										511	81100	FT	CONCRETE, MISC.: PARAPET REPAIR	2/16
90	84	100		75	84	45	95	84	526	532	353	512	10100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	3/16
	876	3218			3478	4182	1160	1738	3002	3100		512	10400	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
									526	532		512	74000	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
						433						516	01301	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	3/16
							21	10				516	46801	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	3/16
							LUMP	LUMP				516	47001		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	3/16
200	200	200		150	200	250	250	200			200	519	11101	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	3/16
	9	33			35	42	12	18				SPEC	51912304	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	
							LUMP	LUMP				SPEC	53000200		STRUCTURE, MISC.: STRUCTURE CLEANING	3/16
50	50	50		50	50		50	50				SPEC	53000800	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL	4/16
						10				10		601	20010	CY	CRUSHED AGGREGATE SLOPE PROTECTION	
												601	26000	CY	DUMPED ROCK FILL, TYPE B	
7.5	15	15		7.5	15	15	15	15	15	15	15	630	02100	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
1	2	2		1	2	2	2	2	2	2	2	630	80100	SF	SIGN, FLAT SHEET, 730.20	
1	1	2		1	1	2	2	2	2	2	2	630	84900	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		2		1	1	2			2	2	2	630	86002	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
150	100	100		50	100	150	150	100			100	843	50000	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	
												848	10001	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1 1/2")	4/16
511	864			873								848	20001	SY	SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN	4/16
511	864			873								848	30001	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	4/16
43	73			73								848	50000	SY	HAND CHIPPING	
16	26			27								848	50100		TEST SLAB	
LUMP	LUMP			LUMP												
1	1			1								848	50201	CY	FULL DEPTH REPAIR, AS PER PLAN	4/16

STRUCTURE ESTIMATED QUANTITIES

SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1521
 SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774, & SUM-241-1172

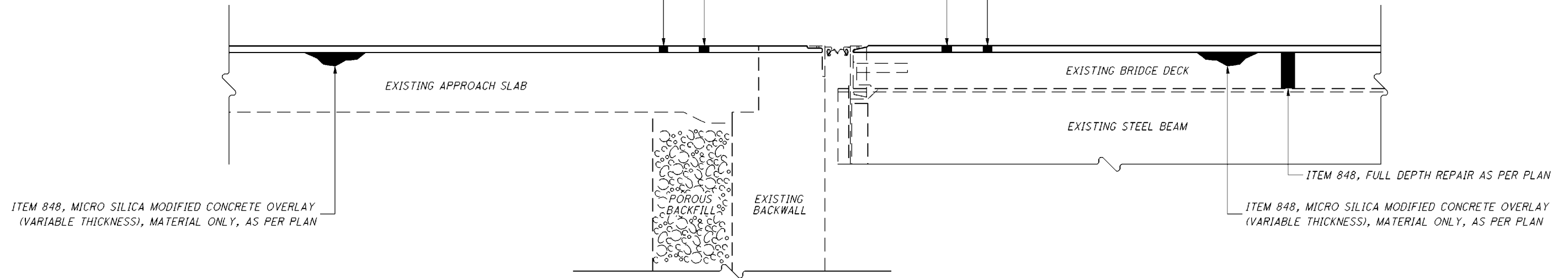
SUM-76/241-
 VAR/11.72
 PID No. 77876

ITEM 848, MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T = 1/2")

ITEM 848, SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN (T = 1/2")

ITEM 848, MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T = 1/2")

ITEM 848, SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN (T = 1/2")



SUM-76-1179L, SUM-76-1179R, SUM-76-1246, SUM-76-1265
SUM-76-1273, SUM-76-1303J, SUM-76-1332, & SUM-76-1518

APPROACH SHOWN,
TRAILING SIMILAR

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BRIDGE NUMBER	BRIDGE DECK										APPROACH SLABS														
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	848	848	848	848	848	848		LENGTH (APPROACH SLABS)	APPROACH SLAB WIDTH	APPROACH SLAB AREA	APPROACH (FORWARD / REAR)	848	848	848	848							
				MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1.5")	SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN (T=1.5")	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	HAND CHIPPING	TEST SLAB	FULL DEPTH REPAIR, AS PER PLAN																
FT	FT	SQ YD	SY	SY	CY	SY	LUMP	CY		FT	FT	SQ YD		SY	SY	CY	SY								
SUM-76-1179L	58.00	55.00	354.44	354.44	354.44	29.54	10.63	LUMP	1.00		15.00	55.00	91.67	FWD	91.67	91.67	7.64	2.75							
											15.00	55.00	91.67	REAR	91.67	91.67	7.64	2.75							
SUM-76-1179R	62.00	65.50	451.22	451.22	451.22	37.60	13.54	LUMP	1.00		15.00	65.50	109.17	FWD	109.17	109.17	9.10	3.28							
											15.00	65.50	109.17	REAR	109.17	109.17	9.10	3.28							
SUM-76-1246	104.00	28.00	323.56	323.56	323.56	26.96	9.71	LUMP	1.00		20.00	28.00	62.22	FWD	62.22	62.22	5.19	1.87							
											20.00	28.00	62.22	REAR	62.22	62.22	5.19	1.87							
SUM-76-1265	68.00	140.00	1057.78	1057.78	1057.78	88.15	31.73	LUMP	1.00		25.00	140.00	388.89	FWD	388.89	388.89	32.41	11.67							
											25.00	140.00	388.89	REAR	388.89	388.89	32.41	11.67							
SUM-76-1273 (WESTBOUND ONLY)	814.00	73.00	6602.44	6602.44	6602.44	550.20	198.07	LUMP	1.00		30.00	73.00	243.33	FWD	243.33	243.33	20.28	7.30							
											30.00	73.00	243.33	REAR	243.33	243.33	20.28	7.30							
SUM-76-1303J	104.00	28.00	323.56	323.56	323.56	26.96	9.71	LUMP	1.00		30.00	28.00	93.33	FWD	93.33	93.33	7.78	2.80							
											30.00	28.00	93.33	REAR	93.33	93.33	7.78	2.80							
SUM-76-1332 (WESTBOUND ONLY)	58.00	72.00	464.00	464.00	464.00	38.67	13.92	LUMP	1.00		25.00	72.00	200.00	FWD	200.00	200.00	16.67	6.00							
											25.00	72.00	200.00	REAR	200.00	200.00	16.67	6.00							
SUM-76-1518	230.50	28.00	717.11	717.11	717.11	59.76	21.51	LUMP	1.00		25.00	28.00	77.78	FWD	77.78	77.78	6.48	2.33							
											25.00	28.00	77.78	REAR	77.78	77.78	6.48	2.33							
				10295	10295	858	309	0	8	0				TOTALS	2533	2533	212	76	0	0	0	0	0	0	0

DESIGN AGENCY: ODOT --- DISTRICT 4
 PLANNING AND ENGINEERING

DATE: 8/7/2015
 STRUCTURE FILE NUMBER

REVIEWED: LMP
 STRUCTURE FILE NUMBER

DRAWN: NRC
 REVISED

DESIGNED: NRC
 CHECKED

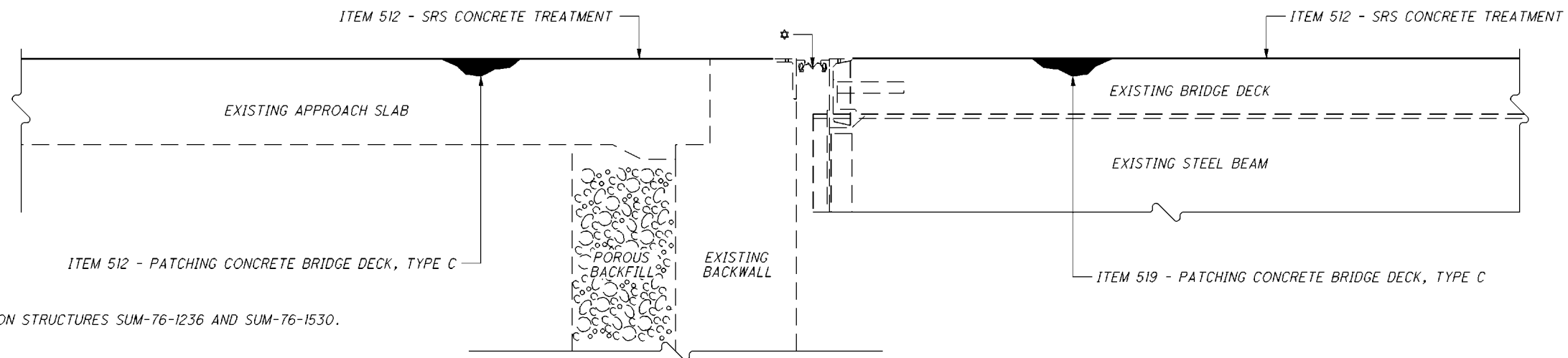
STRUCTURE DETAILS

SUM-76-1179L, SUM-76-1179R, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1303J, SUM-76-1332, & SUM-76-1518

SUM-76/241-VAR/11.72
 PID No. 77876

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SUM-76-1230, SUM-76-1273, SUM-76-1296, SUM-76-1407, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, & SUM-76-1774

BRIDGE NUMBER	BRIDGE DECK										APPROACH SLABS										
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	512	SPEC	516					LENGTH (APPROACH SLABS)	APPROACH SLAB WIDTH	APPROACH SLAB AREA	APPROACH (FORWARD / REAR)	512	SPEC					
				TREATING OF CONCRETE BRIDGE DECK WITH SRS	PATCHING CONCRETE BRIDGE DECK - TYPE C	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	FT	FT	FT	FT					FT	FT	FT	SQ YD	SY	SY	SY
SUM-76-1230	80.00	146.25	1300.00	1300.00	13.00	292.50					25.00	146.25	406.25	FWD	406.25	4.06					
											25.00	146.25	406.25	REAR	406.25	4.06					
SUM-76-1273 (EASTBOUND ONLY)	814.00	72.00	6512.00	6512.00	32.56						27.50	117.00	357.50	FWD	357.50	1.79					
											30.00	72.00	240.00	REAR	240.00	1.20					
SUM-76-1296	73.00	154.50	1253.17	1253.17	18.80						25.00	154.50	429.17	FWD	429.17	6.44					
											25.00	154.50	429.17	REAR	429.17	6.44					
SUM-76-1332 (EASTBOUND ONLY)	58.00	73.00	470.44	470.44	4.70						25.00	73.00	202.78	FWD	202.78	2.03					
											25.00	73.00	202.78	REAR	202.78	2.03					
SUM-76-1407	168.00	127.00	2370.67	2370.67	23.71						30.00	127.00	423.33	FWD	423.33	4.23					
											30.00	127.00	423.33	REAR	423.33	4.23					
SUM-76-1518	208.00	119.00	2750.22	2750.22	27.50						25.00	119.00	330.56	FWD	330.56	3.31					
											30.00	119.00	396.67	REAR	396.67	3.97					
SUM-76-1531	286.00	112.00	3559.11	3559.11	35.59	224.00					25.00	112.00	311.11	FWD	311.11	3.11					
											25.00	112.00	311.11	REAR	311.11	3.11					
SUM-76-1631	267.00	34.00	1008.67	1008.67	10.09						20.00	34.00	75.56	FWD	75.56	0.76					
											20.00	34.00	75.56	REAR	75.56	0.76					
SUM-76-1648	400.00	34.00	1511.11	1511.11	15.11						30.00	34.00	113.33	FWD	113.33	1.13					
											30.00	34.00	113.33	REAR	113.33	1.13					
SUM-76-1695	173.00	120.00	2306.67	2306.67							25.00	125.00	347.22	FWD	347.22						
											25.00	125.00	347.22	REAR	347.22						
SUM-76-1773	175.00	124.00	2411.11	2411.11							25.00	124.00	344.44	FWD	344.44						
											25.00	124.00	344.44	REAR	344.44						
			TOTALS	25454	182	0	517	0	0	0				TOTALS	6632	54	0	0	0	0	0

BRIDGE OVERLAY CALULATIONS

DESIGN AGENCY: ODOT --- DISTRICT 4
 DATE: 8/7/2015
 STRUCTURE FILE NUMBER:
 DESIGNER: NRC
 CHECKED:
 DRAWN: NRC
 REVISED:
 REVIEWED: LMP
 DATE: 8/7/2015
 STRUCTURE FILE NUMBER:
 PLANING AND ENGINEERING


STRUCTURE DETAILS
 SUM-76-1230, SUM-76-1273, SUM-76-1296, SUM-76-1332, SUM-76-1407, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, & SUM-76-1774

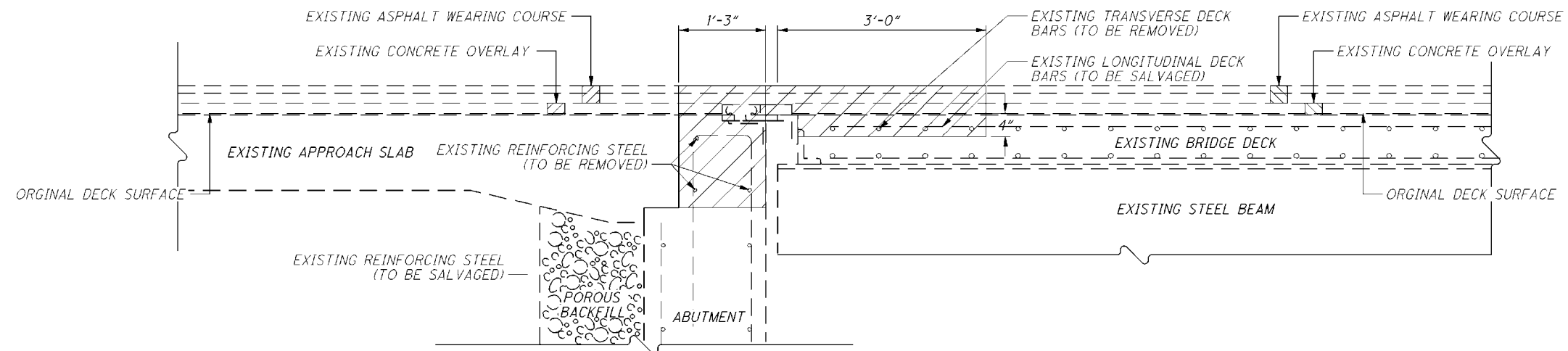
SUM-76/241-VAR/11.72
 PID No. 77876

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NOTES:

1.  ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED
2. REMOVAL OF EXISTING JOINTS, DECK CONCRETE AND BACKWALL CONCRETE WILL BE PAID FOR UNDER ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN. REMOVAL LIMITS WILL BE 1 FT. AWAY FROM BARRIER WALL TO 1 FT. AWAY FROM MEDIAN WALL OF BRIDGE DECK AND BACKWALL FOR THE LENGTH SHOWN IN THE DETAIL BELOW AT EACH ABUTMENT. CARE WILL BE TAKEN TO SALVAGE ALL EXISTING LONGITUDINAL DECK AND BACKWALL U-SHAPED REINFORCING STEEL DURING CONCRETE REMOVAL.



SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, AND SUM-76-1041

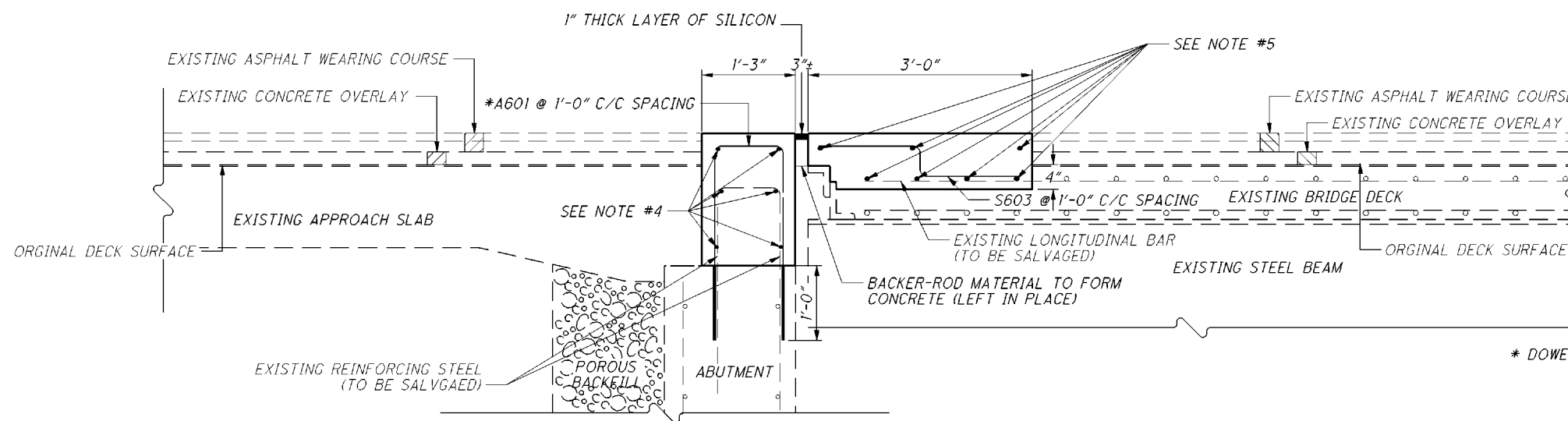
APPROACH PAVEMENT SHOWN
TRAILING PAVEMENT SIMILAR

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DESIGNED NRC CHECKED	DRAWN NRC REVISED	REVIEWED LMP STRUCTURE FILE NUMBER	DATE 8/7/2015	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
REMOVAL DETAILS				
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, & SUM-76-1041				
SUM-76/241- VAR/11.72				
PID No. 77876				
11 / 16				
84 103				

NOTES:

1. REBUILD PORTION OF DECK AND ABUTMENT BACKWALL PER THE DETAIL SHOWN BELOW. ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SUCH AS BACKER-ROD MATERIAL AND 1" THICK LAYER OF SILICON REQUIRED TO PERFORM THIS WORK WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM SPEC, PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH - LATEX MODIFIED CONCRETE).
2. ALL REINFORCING STEEL REQUIRED TO COMPLETE THE CONSTRUCTION OF THE NEW JOINT WILL BE PAID FOR UNDER ITEM 509, EPOXY COATED REINFORCING STEEL, AS PER PLAN.
3. PROVIDE A 2" MINIMUM REINFORCING STEEL CLEARANCE.
4. SUM-76-0913: 3-A501
SUM-76-0956: 3-A501 OR 3-A502
SUM-76-0966: 3-A501
SUM-76-1034: 3-A501
SUM-76-1041: 3-A501 OR 3-A502
5. SUM-76-0913: 3-S601
SUM-76-0956: 3-S601 OR 3-S602
SUM-76-0966: 3-S601
SUM-76-1034: 3-S601
SUM-76-1041: 3-S01 OR 3-S02



SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, AND SUM-76-1041

APPROACH PAVEMENT SHOWN
TRAILING PAVEMENT SIMILAR

* SEE SHEET 12A/16 FOR QUANTITIES

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DESIGNED NRC CHECKED	DRAWN NRC REVISED	REVIEWED LMP STRUCTURE FILE NUMBER	DATE 8/7/2015	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
SUPERSTRUCTURE DETAILS				
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, & SUM-76-1041				
SUM-76/241- VAR/11.72				
PID No. 77876				
12/16				
85 103				

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BRIDGE NUMBER	BRIDGE DECK										BACKWALL														
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	SPEC								LENGTH (BACKWALL)	BACKWALL WIDTH	BACKWALL AREA	APPROACH (FORWARD / REAR)	SPEC									
				PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	519 CONCRETE STRUCTURE, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)											PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)									
FT	FT	SQ YD	CU YD	LUMP							FT	FT	SQ YD		CU YD										
SUM-76-0914 EASTBOUND	3.00	68.00	22.67	5.67	LUMP						1.25	68.00	9.44	FWD	5.51										
	3.00	68.00	22.67	5.67	LUMP						1.25	68.00	9.44	REAR	5.51										
SUM-76-0914 WESTBOUND	3.00	68.00	22.67	5.67	LUMP						1.25	68.00	9.44	FWD	5.51										
	3.00	68.00	22.67	5.67	LUMP						1.25	68.00	9.44	REAR	5.51										
SUM-76-0956 EASTBOUND	3.00	64.00	21.33	5.33	LUMP						1.25	64.00	8.89	FWD	5.19										
	3.00	64.00	21.33	5.33	LUMP						1.25	68.00	9.44	REAR	5.51										
SUM-76-0956 WESTBOUND	3.00	98.00	32.67	8.17	LUMP						1.25	98.00	13.61	FWD	7.94										
	3.00	110.00	36.67	9.17	LUMP						1.25	110.00	15.28	REAR	8.91										
SUM-76-0966 EASTBOUND	3.00	54.00	18.00	4.50	LUMP						1.25	54.00	7.50	FWD	4.38										
	3.00	54.00	18.00	4.50	LUMP						1.25	54.00	7.50	REAR	4.38										
SUM-76-0966 WESTBOUND	3.00	54.00	18.00	4.50	LUMP						1.25	54.00	7.50	FWD	4.38										
	3.00	54.00	18.00	4.50	LUMP						1.25	54.00	7.50	REAR	4.38										
SUM-76-1034 EASTBOUND	3.00	70.00	23.33	5.83	LUMP						1.25	70.00	9.72	FWD	5.67										
	3.00	70.00	23.33	5.83	LUMP						1.25	70.00	9.72	REAR	5.67										
SUM-76-1034 WESTBOUND	3.00	58.00	19.33	4.83	LUMP						1.25	58.00	8.06	FWD	4.70										
	3.00	58.00	19.33	4.83	LUMP						1.25	58.00	8.06	REAR	4.70										
SUM-76-1041 EASTBOUND	3.00	85.00	28.33	7.08	LUMP						1.25	85.00	11.81	FWD	6.89										
	3.00	70.00	23.33	5.83	LUMP						1.25	70.00	9.72	REAR	5.67										
SUM-76-1041 WESTBOUND	3.00	104.00	34.67	8.67	LUMP						1.25	104.00	14.44	FWD	8.43										
	3.00	58.00	19.33	4.83	LUMP						1.25	58.00	8.06	REAR	4.70										
TOTALS				117	0	0	0	0	0	0	TOTALS			114	0	0	0	0	0	0	0	0	0	0	0

SUPERSTRUCTURE DETAILS
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-10343, & SUM-76-1041

DESIGNED NRC CHECKED	DRAWN NRC REVISED	REVIEWED TJP STRUCTURE FILE NUMBER	DATE 12/2/2015
DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING			

SUM-76/241-VAR/11.72
PID No. 77876

12A/16

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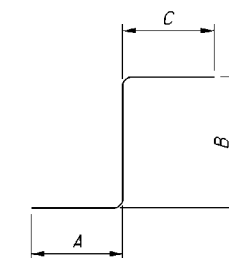
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
EASTBOUND												
S601	21	21		42	25'-0"	1578	STR					
S603	69	69		138	2'-9"	571	8	1'-4"	5"	1'-4"		
WESTBOUND												
S601	21	21		42	25'-0"	1578	STR					
S603	69	69		138	3'-1"	640	8	1'-4"	5"	1'-4"		
SUPERSTRUCTURE SUB-TOTAL						4367						
EASTBOUND												
A501	18	18		36	25'-0"	939	STR					
*A601	69	69		138	3'-9"	778	2	1'-7"	11"	1'-7"		
WESTBOUND												
A501	18	18		36	25'-0"	939	STR					
*A601	69	69		138	4'-1"	847	2	1'-7"	11"	1'-7"		
ABUTMENT SUB-TOTAL						3503						
GRAND TOTAL						7870						

* DOWEL

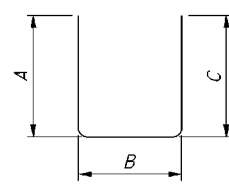
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

REINFORCEMENT STEEL SUM-76-0913	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
DESIGNED NRC CHECKED	DRAWN NRC REVISED
REVIEWED LMP STRUCTURE FILE NUMBER	DATE 8/7/2015
SUM-76/241- VAR/11.72 PID No. 77876	
13 / 16	
86 103	

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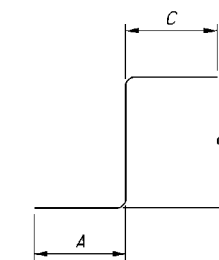
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
EASTBOUND												
S601	21	21		42	24'-0"	1515	STR					
S603	65	65		130	2'-9"	537	8	1'-4"	5"	1'-4"		
WESTBOUND												
S601	21			21	35'-0"	1104	STR					
S602		21		21	39'-0"	1231	STR					
S603	99	108		207	2'-9"	856	8	1'-4"	5"	1'-4"		
SUPERSTRUCTURE SUB-TOTAL						5243						
EASTBOUND												
A501	21	21		42	24'-0"	1052	STR					
*A601	65	65		130	3'-9"	733	2	1'-7"	11"	1'-7"		
WESTBOUND												
A501	21			21	34'-7 1/2"	759	STR					
A502		21		21	38'-0"	833	STR					
*A601	99	108		207	3'-9"	1166	2	1'-7"	11"	1'-7"		
ABUTMENT SUB-TOTAL						4543						
GRAND TOTAL						9786						

* DOWEL

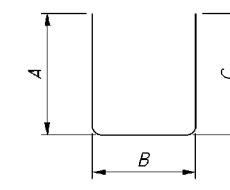
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

REINFORCEMENT STEEL SUM-76-0956	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
SUM-76/241- VAR/11.72 PID No. 77876	REVIEWED LMP DATE 8/7/2015 STRUCTURE FILE NUMBER
DESIGNED NRC CHECKED	DRAWN NRC REVISED
14 / 16	87 103

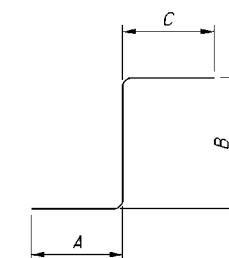
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MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
EASTBOUND												
S601	21	21		42	20'-6"	1294	STR					
S603	55	55		110	2'-9"	455	8	1'-4"	5"	1'-4"		
WESTBOUND												
S601	21	21		42	20'-6"	1294	STR					
S603	55	55		110	2'-9"	455	STR	1'-4"	5"	1'-4"		
							8					
SUPERSTRUCTURE SUB-TOTAL						3498						
EASTBOUND												
A501	18	18		36	20'-0"	751	STR					
*A601	55	55		110	3'-9"	620	2	1'-7"	11"	1'-7"		
WESTBOUND												
A501	18	18		36	20'-0"	751	STR					
*A601	55	55		110	3'-9"	620	2	1'-7"	11"	1'-7"		
ABUTMENT SUB-TOTAL						2742						
GRAND TOTAL						6240						

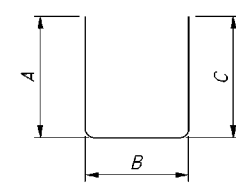
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

DESIGNED NRC CHECKED		DRAWN NRC REVISED	REVIEWED LMP STRUCTURE FILE NUMBER	DATE 8/7/2015	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
REINFORCEMENT STEEL					SUM-76-0966
SUM-76/241- VAR/11.72 PID No. 77876					15/16
88 103					

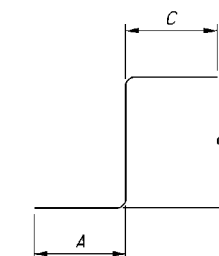
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MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
EASTBOUND												
S601	21	21		42	26'-0"	1641	STR					
S603	71	71		142	2'-9"	587	8	1'-4"	5"	1'-4"		
WESTBOUND												
S601	21	21		42	21'-6"	1357	STR					
S603	69	69		138	3'-1"	640	8	1'-4"	5"	1'-4"		
SUPERSTRUCTURE SUB-TOTAL						4225						
EASTBOUND												
A501	18	18		36	26'-0"	977	STR					
*A601	71	71		142	3'-9"	800	2	1'-7"	11"	1'-7"		
WESTBOUND												
A501	18	18		36	21'-6"	808	STR					
*A601	69	69		138	4'-1"	847	2	1'-7"	11"	1'-7"		
ABUTMENT SUB-TOTAL						3432						
GRAND TOTAL												
						7657						

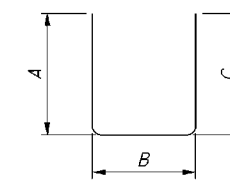
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

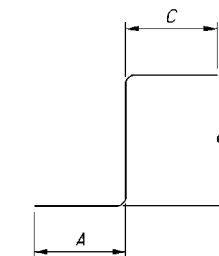
REINFORCEMENT STEEL SUM-76-1034	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
DESIGNED NRC CHECKED	DRAWN NRC REVISED
REVIEWED TJP	DATE 12/2/2015 STRUCTURE FILE NUMBER
SUM-76/241- VAR/11.72 PID No. 77876	15A/16 88A 103

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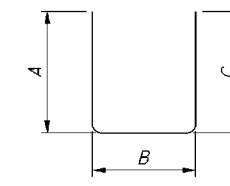
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
EASTBOUND												
S601	21			21	25'-9"	813	STR					
S602		21		21	30'-6"	963	STR					
S603	71	86		157	2'-9"	649	8	1'-4"	5"	1'-4"		
WESTBOUND												
S601	21			21	21'-9"	687	STR					
S602		21		21	37'-0"	1168	STR					
S603	99	108		207	2'-9"	856	8	1'-4"	5"	1'-4"		
SUPERSTRUCTURE SUB-TOTAL						5136						
EASTBOUND												
A501	18			18	25'-9"	484	STR					
A502		18		18	30'-2"	816	STR					
*A601	71	86		157	3'-9"	885	2	1'-7"	11"	1'-7"		
WESTBOUND												
A501	18			18	21'-9"	409	STR					
A502		18		18	37'-0"	695	STR					
*A601	99	108		207	3'-9"	1166	2	1'-7"	11"	1'-7"		
ABUTMENT SUB-TOTAL						4455						
GRAND TOTAL						9591						

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS. UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORCING STEEL TO BE EPOXY COATED
* = DOWEL



TYPE-8



TYPE-2

DESIGNED NRC CHECKED		DRAWN NRC REVISED		REVIEWED TJP	DATE 12/2/2015	DESIGN AGENCY ODOT --- DISTRICT 4
REINFORCEMENT STEEL		SUM-76-1041		STRUCTURE FILE NUMBER		PLANNING AND ENGINEERING
SUM-76/241- VAR/11.72		PID No. 77876		15B/16		88B 103

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

SS 843 DATED 4/18/2003

PROPOSED WORK

- SUM-76-1365 (LT CUY RIV, MASSILLON RD)
- PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
- SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
- REMOVE AND REPLACE EXISTING EXPANSION JOINTS
- REPAIR PARAPET WALLS
- PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
- REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
- SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
- CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
- NEW STRUCTURE IDENTIFICATION SIGNS

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL

THIS WORK WILL CONSIST OF REMOVING ALL VISIBLY SPALLED AREAS OF THE BOTTOM DECK FLOOR OF STRUCTURE(S) SUM-76-1355 WITHOUT SOUNDING. AFTER SPALLED CONCRETE AREAS HAVE BEEN REMOVED, REMOVAL AREAS WILL BE SEALED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

CONCRETE SPALL REMOVAL WILL BE PAID FOR AT THE UNIT BID PRICE FOR SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL. THIS PRICE WILL INCLUDE THE COST OF LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SY
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SY

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

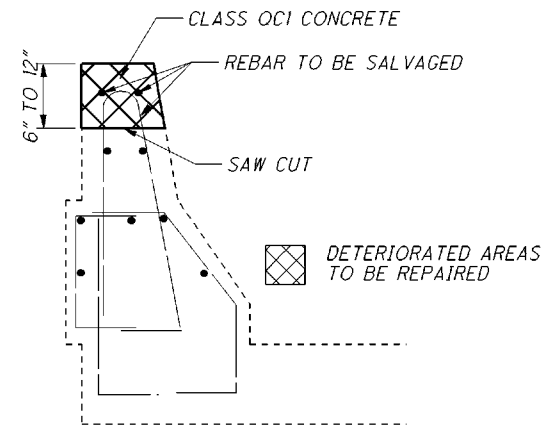
REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 511 - CONCRETE MISC.: PARAPET REPAIR

THIS ITEM WILL BE USED TO REPAIR DAMAGED PARAPETS OF STRUCTURE SUM-76-1365.

SAWCUT AND REMOVE DAMAGED/SPALLED AREAS OF THE EXISTING PARAPETS TO A MINIMUM DEPTH OF 6" AND A MAXIMUM DEPTH OF 12" OR AS DIRECTED BY THE ENGINEER. CARE SHALL BE TAKEN WHEN REMOVING SPALLED CONCRETE TO SALVAGE EXISTING REBAR. CLASS OC1 CONCRETE WILL BE USED TO REPAIR THE DAMAGED PARAPETS. THE REMOVAL OF CONCRETE, PREPARATION OF THE SURFACES, FORMS, AND CLASS OC1 CONCRETE WILL BE INCIDENTAL TO THIS ITEM. PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE PER FOOT FOR ITEM 511, CONCRETE MISC.: PARAPET REPAIR.



STRUCTURE IDENTIFICATION SIGNS

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS FOR THE FOLLOWING STRUCTURES:
SUM-76-1365.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR EACH APPROACH:

- ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SQ FT
- ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 7.5 FT
- ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 1 EACH
- ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 1 EACH

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

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SUM-76/241- VAR/11.72 PID No. 77876	STRUCTURE GENERAL NOTES BRIDGE NO. SUM-76-1365 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD	DESIGNED NRC CHECKED LMP	DRAWN NRC REVISED	REVIEWED LMP STRUCTURE FILE NUMBER	DATE 08/10/15	DESIGN AGENCY ODOT --- DISTRICT 4 PLANNING AND ENGINEERING
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DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE 17TH EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 2002 INCLUDING ALL SUBSEQUENT INTERIM SPECIFICATIONS AND THE 2004 ODOT BRIDGE DESIGN MANUAL INCLUDING INTERIMS.

DESIGN DATA

DESIGN LOADING (EXPANSION JOINT) - HS25 WITH 100% IMPACT.
EXPANSION JOINT STEEL - ASTM A709, GRADE 36
CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4500 PSI (EXPANSION JOINT BLOCKOUT & PARAPET/MEDIAN)
REINFORCING STEEL - ASTM A615 OR A996, GRADE 60 WITH MINIMUM YIELD STRESS OF 60 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL AND 2 1/2" CONCRETE COVER.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

PROPOSED ABUTMENT EXPANSION JOINT WORK

1. SET UP AND MAINTAIN TRAFFIC CONTROL FOR PHASE CONSTRUCTION FOR THE REAR AND FORWARD ABUTMENT EXPANSION JOINT REPLACEMENT AND RELATED PARAPET/MEDIAN WORK. MAINTAIN TWO LANES OF TRAFFIC ALL TIMES.
2. REMOVE THE EXISTING REAR AND FORWARD ABUTMENT MODULAR JOINTS INCLUDING 1'-6"± (WIDE) X 1'-1"± (HIGH) ORIGINAL CONCRETE BLOCK OUTS.
3. CUT AND BEND DESIGNATED STIRRUP BARS IN THE BLOCK OUTS TO PROVIDE CLEARANCE FOR THE PROPOSED REPLACEMENT JOINT PER PLAN DETAILS.
4. REMOVE SECTIONS OF THE PARAPET AND MEDIAN TO ACCOMMODATE THE REPLACEMENT OF THE MODULAR JOINT. CAREFULLY REMOVE AND SAVE THE STEEL PARAPET FACING PLATES AND PROJECTING REINFORCING IN THESE LOCATIONS FOR REUSE. DISCARD THE STEEL VERTICAL JOINT END PLATES.
5. MEASURE JOINT OPENING AND COMPARE TO THE PLAN VALUES AT A GIVEN TEMPERATURE. ADJUST JOINT SPACING BETWEEN NEW BLOCK OUT CONCRETE TO BE NEAR THE MIDRANGE OF THE NEW LOW PROFILE JOINT.
6. PLACE NEW REINFORCING STEEL AND CONCRETE IN THE EXISTING JOINT BLOCKOUTS IN THE DECK, ABUTMENT BACKWALL AND FIRST LIFT OF THE PARAPET. SIZE BLOCKOUTS TO APPROPRIATE WIDTH IN THE NEW CONCRETE FOR THE NEW JOINT BASED ON AMBIENT TEMPERATURE. CONSTRUCT THE LOWER SECTION OF THE PARAPET WITH A HORIZONTAL CONSTRUCTION JOINT JUST AT THE TOP OF THE SLOPED FACE CUT OUT FOR THE TURNED UP JOINT SEAL SEGMENT.
7. INSTALL THE JOINT, INCLUDING TURNED UP JOINT SEAL IN THE PARAPET IN THE CONSTRUCTION PHASE PER THE MANUFACTURER'S INSTRUCTIONS. SETTING THE CONCRETE JOINT OPENING AND PLACING THE SEAL SEGMENTS SHOULD BE DONE AS MUCH AS POSSIBLE NEAR THE NEUTRAL TEMPERATURE OF 60 DEGREES.
8. IMMEDIATELY DOWEL AND INSTALL ADHESIVE ANCHORS THROUGH THE ELASTOMERIC JOINT INTO THE NEW CONCRETE BLOCKOUT. THE USE OF ADHESIVE ANCHORS IN DOWEL HOLES INSTEAD OF CAST-IN-PLACE ANCHORS IS PREFERRED TO PROVIDE MAXIMUM ADJUSTMENT WHEN SETTING THE ELASTOMERIC JOINT SEGMENTS. INSTALL CAST-IN-PLACE ANCHOR RODS WITH THE CONCRETE POUR ONLY WITH THE PERMISSION OF THE ENGINEER.
9. PLACE REMAINING PARAPET REINFORCING STEEL. PLACE THE REUSED PARAPET OR MEDIAN FACE PLATES, DEPENDING ON THE CONSTRUCTION PHASE, AND THE CONCRETE ABOVE THE CONSTRUCTION JOINT. THE EXISTING MODULAR JOINT CONCRETE BLOCK OUTS EXTEND TO THE FACE OF TURNED-BACK WINGWALL. THESE SURFACES HAVE A FORMED AESTHETIC TREATMENT. THE CONTRACTOR SHALL RECREATE THE TEXTURE AND COLORING TO BLEND THE NEW CONCRETE INTO THE ORIGINAL WALL SURFACE.
10. APPLY THE JOINT SEALING COMPOUND AROUND THE EDGES OF THE JOINT AFTER THE JOINT MANUFACTURER'S RECOMMENDED CURING PERIOD FOR THE CONCRETE. (APPROXIMATELY 14 DAYS.) SUBMIT ALL ALTERNATE CONCRETE MATERIAL PROPOSALS FOR APPROVAL.
11. FLOOD THE COMPLETED JOINT PORTIONS AS DESCRIBED IN THE GENERAL NOTE TO ENSURE THAT THE INSTALLED JOINT DOES NOT LEAK. IN THE FINAL PHASE OF CONSTRUCTION, ENSURE THE FLOODING COVERS THE PHASED CONSTRUCTION JOINT TO TEST IT FOR LEAKAGE.
12. REPEAT THE PROCEDURE FOR THE OTHER CONSTRUCTION PHASE.

ITEM 202 - PORTION OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

REMOVAL LIMITATIONS

THIS WORK CONSISTS OF THE PARTIAL REMOVAL OF CONCRETE DECKS AND PARAPETS, AND MODULAR DECK JOINTS AT THE ABUTMENT JOINTS. THE REMOVAL LIMITS ARE SHOWN IN THE PLANS, AND ARE GENERALLY CONFINED TO THE EXISTING CONCRETE PARAPETS AND CONCRETE BLOCKOUTS ORIGINALLY CONSTRUCTED IN THE DECK AND BACKWALL FOR THE INSTALLATION OF THE EXISTING MODULAR EXPANSION JOINTS. THE EXISTING REINFORCING STEEL PROJECTING INTO THESE BLOCKOUT AREAS IS TO BE PRESERVED FOR REUSE AS INDICATED IN THE PLANS.

THE WORK SHALL ALSO INCLUDE THE CAREFUL REMOVAL OF THE PROTECTIVE STEEL PLATES COVERING THE JOINT GAPS IN THE CONCRETE PARAPETS. THESE PLATES ARE TO BE STORED AND REUSED IN THE REBUILT PARAPETS AT THE NEW JOINTS.

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS

IT IS NOT ANTICIPATED THAT THE CONCRETE REMOVAL WILL AFFECT THE STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) AT THE BRIDGE ENDS. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05. THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

MISCELLANEOUS CONCRETE REMOVAL

THE TOP OF THE BACKWALLS EXHIBIT ISOLATED AREAS WITH SPALLING AND DELAMINATION ADJACENT TO THE CONCRETE BLOCKOUTS DESIGNATED FOR REMOVAL. REMOVE THESE DAMAGED AREAS AS PART OF THE CONCRETE REMOVAL AND PREPARE THEM FOR CONCRETE PATCHING IN ACCORDANCE WITH ITEM 519. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEM 202 REMOVAL ITEM.

MEASUREMENT AND PAYMENT

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DOWEL QUANTITY IS FOR NEW REINFORCING STEEL INSTALLED INTO EXISTING CONCRETE AS SHOWN ON THE PLANS.

AN ADDITIONAL QUANTITY OF 12 DOWEL BARS HAS BEEN INCLUDED IN THE JOINT REPLACEMENT PLANS TO BE USED AS DIRECTED BY THE ENGINEER TO SECURE REPLACEMENT REINFORCING STEEL BARS IN THE EXISTING CONCRETE BACKWALL, DECK OR PARAPET. THE QUANTITY IS TO BE USED FOR EXISTING BARS DEEMED UNUSABLE BY THE ENGINEER UPON COMPLETION OF CONCRETE REMOVAL AND PREPARATION FOR THE NEW JOINT CONCRETE OPERATIONS.

THIS QUANTITY IS NOT TO BE USED FOR ANCHORING REPLACEMENT REINFORCING STEEL BARS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS; NOR IS IT TO BE USED FOR THE ANCHORAGE OF THE LOW PROFILE JOINT SYSTEM, WHOSE ANCHOR INSTALLATION IS PAID FOR AS PART OF THE JOINT PAY ITEM.

ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN

BRIDGE JOINT BLOCK-OUT CONCRETE MAY BE OPENED TO TRAFFIC AFTER SEVEN DAYS OF CURING AND WHEN COMPRESSIVE STRENGTH IS ≥ 0.85% f'c OR FLEXURAL STRENGTH IS ≥ 650 PSI. ODOT SUPPLEMENT 1098, PROCEDURE FOR ESTIMATING CONCRETE STRENGTH BY THE MATURITY METHOD, SHALL BE USED TO DETERMINE CONCRETE STRENGTH.

INCLUDE CONCRETE FORMLINER COSTS IN THE CONCRETE PAY ITEM.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

SEAL THE NEW CONCRETE IN THE REBUILT PARAPETS, DECK END BLOCK FASCIA, AND ABUTMENT CONCRETE WITH AN EPOXY-URETHANE SEALER CLOSELY MATCHING THE SEALER COLOR ON THE EXISTING CONCRETE.

ITEM 513 - STRUCTURAL STEEL, MISC.: PREPARATION AND REINSTALLATION OF STEEL PARAPET COVER PLATES

WORK UNDER THIS ITEM INCLUDES THE STORAGE, PREPARATION AND REINSTALLATION OF THE STEEL PLATES COVERING THE GAPS IN THE PARAPETS AT THE ABUTMENT JOINTS.

PREPARATION OF THE PLATES INCLUDES THE REMOVAL OF SELECTED BENT ANCHORS, AS WELL AS INSTALLATION OF NEW WELDED STUD ANCHORS AS SHOWN IN THE PLANS.

THE REINSTALLATION OF THE PLATES INCLUDES THE POSITIONING AND TEMPORARY SUPPORT OF THE PLATES IN THEIR FINAL POSITION WHILE THE PARAPET CONCRETE IS PLACED AND CURES. ALSO INCLUDED IS THE INSTALLATION OF THE OUTER COVER PLATE TO THE EMBEDDED PLATES WITH NEW STAINLESS STEEL SCREWS PER CMS 730.10 PROVIDED BY THE CONTRACTOR.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: LOW PROFILE JOINT SYSTEM

A. DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO DESIGN, FABRICATE, INSPECT, TEST AND INSTALL LOW PROFILE JOINT SYSTEMS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE JOINT SHALL BE THE WABO TRANSFLEX, MODEL NUMBER 650, OR APPROVED EQUIVALENT.

B. GENERAL

1. THE JOINT SHALL BE DESIGNED, CONSTRUCTED AND FABRICATED IN ACCORDANCE WITH THESE PLANS AND NOTES, THE OHIO DEPARTMENT OF TRANSPORTATION'S LATEST CONSTRUCTION AND MATERIALS SPECIFICATION, THE 2004 OHIO BRIDGE DESIGN MANUAL AND AASHTO'S 2002 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
2. THE JOINT MANUFACTURER'S TECHNICAL REPRESENTATIVE SHALL PHYSICALLY OVERSEE THE FABRICATION, INSTALLATION, ADJUSTMENT AND TESTING DURING ALL OPERATIONS.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: LOW PROFILE JOINT SYSTEM (CONTINUED ON NEXT SHEET)

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RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE 7/20/15
REVIEWED DAP
STRUCTURE FILE NUMBER 7706456

DRAWN SJK
SJK REVISED

DESIGNED BLN
BLN CHECKED KAK

GENERAL NOTES - 1
BRIDGE NO. SUM-76-1365
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-
VAR/11.72
PID No. 77876

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ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: LOW PROFILE JOINT SYSTEM (CONTINUED)

C. DESIGN

1. THE JOINT SYSTEM SHALL BE DESIGNED FOR AASHTO HS25 LOADING PLUS 100% IMPACT. THE JOINT SYSTEM SHALL ALSO BE DESIGNED FOR FATIGUE. THE MANUFACTURER SHALL SUBMIT CALCULATIONS SHOWING THAT THE DEVICE CAN MEET THE IMPACT AND FATIGUE DESIGN REQUIREMENTS. THE FATIGUE CYCLES SHOULD BE 2,000,000+ TRUCK LOAD CYCLES.
2. THE DESIGN SHALL BE PREPARED BY AND CHECKED UNDER THE AUTHORITY OF AN OHIO-REGISTERED PROFESSIONAL ENGINEER. THE REGISTERED PROFESSIONAL ENGINEER SHALL SEAL, SIGN AND DATE THE DESIGN CALCULATIONS AND SHOP DRAWINGS.
3. THE DESIGN CALCULATIONS SHALL BE INCLUDED WITH THE CONTRACTOR'S SUBMISSION OF SHOP DRAWINGS PER CMS 513.06.
4. THE SHOP DRAWINGS SHALL CONTAIN A DETAILED INSTALLATION PROCEDURE AND INCLUDE ANY SPECIFIC MANUFACTURER'S NOTES NECESSARY FOR COMPLETION OF THE WORK AND CONSTRUCTION PHASING.
5. TEMPORARY AND FIELD CONNECTIONS TO THE BRIDGE SHALL BE DESIGNED TO ACCOMMODATE ADJUSTMENTS FOR ROADWAY GEOMETRY AND VARYING TEMPERATURE.
6. THE JOINT SHALL ACCOMMODATE THE PLAN SPECIFIED MOVEMENT FOR A COLD CLIMATE AS SPECIFIED IN BY 2002 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES SECTION 3.16.
7. THE JOINT SYSTEM SHALL BE REMOVABLE AND REPLACEABLE.
8. THE JOINT SYSTEM SHALL BE SET 1/8 INCH BELOW THE ROADWAY SURFACE.

D. MATERIALS

1. ALL STRUCTURAL AND PERMANENT MATERIALS SHALL BE OF DOMESTIC ORIGIN, AND MATERIAL CERTIFICATION STATING ALL SUCH MATERIALS ARE "MELTED AND MANUFACTURED" IN THE UNITED STATES OF AMERICA SHALL BE SUBMITTED.
2. STRUCTURAL STEEL PLATES AND ANGLES IMBEDDED IN THE MOLDED PANELS SHALL BE IN ACCORDANCE WITH ASTM A709, GRADE 36 OR BETTER.
3. ADHESIVE ANCHORS - ANCHOR RODS, NUTS, AND WASHERS SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS. MATERIALS SHALL BE GALVANIZED.
4. ADHESIVE ANCHORS - THE NON-SHRINK, NONMETALLIC EPOXY GROUT USED TO INSTALL THE ANCHOR RODS SHALL CONFORM TO ODOT'S CMS 705.20.
5. THE ELASTOMER USED TO MOLD THE PANELS SHALL MEET THE FOLLOWING PHYSICAL REQUIREMENTS:

PHYSICAL PROPERTIES	ASTM	REQUIREMENTS
TENSILE STRENGTH, MIN. PSI. (KG/CM2)	D-412	1800 (12.4)
ELONGATION AT BREAK, MIN. %	D-412	400
HARDNESS, TYPE A DUROMETER	D-2240	45 ± 5
LOW TEMPERATURE, BRITTLINESS 3 MIN. @ -40°F	D-746	NOT BRITTLE
FLAME RESISTANCE	C-542	FLAME MUST NOT PROPAGATE
RESISTANCE TO OIL AGING CHANGE IN VOLUME AFTER 70 HRS. IMMERSION IN ASTM OIL #3 @212°F (100°C), % MAX.	D-471	120
RESISTANCE TO OZONE CONDITION AFTER EXPOSURE TO 100 PPHM OZONE IN AIR FOR 70 HRS. @ 104°F (SAMPLE UNDER 20% STRAIN)	D-1149	NO CRACKS
RESISTANCE TO PERMANENT SET COMPRESSION SET AFTER 22 HRS. @ 158°F (70°C), % MAX.	D-395	20

6. BOLT HOLE CAVITIES SHALL BE FILLED WITH A TWO-PART POLYURETHANE SEALANT WHICH MEETS FEDERAL SPECIFICATION TT-S-00227E. THE PHYSICAL PROPERTIES SHALL MEET OR EXCEED:

PHYSICAL PROPERTIES	ASTM	VALUE
SOLIDS BY WT. - %	D-553	99+1
TENSILE STRENGTH, PSI	D-412	250
ELONGATION - %	D-412	450
MODULUS, 100% ELONGATION	D-412	40
SHORE "A" - INITIAL	D-676	30
RECOVERY, 100% ELONGATION - %	D-412	85
FLEXIBILITY - LOW TEMPERATURE	E-154	-40°F
HIGH TEMPERATURE	D-573	200°F
SERVICE TIME	1980	12 YEARS

7. JOINT SEALING COMPOUND - A ONE-PART POLYSULFIDE BASE SYNTHETIC RUBBER SEALANT SHALL BE USED TO SEAL EDGE VOIDS AND ALL TONGUE AND GROOVE JOINTS. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION TT-S-00230C TYPE II, NON-SAG. THE PHYSICAL PROPERTIES SHALL MEET OR EXCEED:

COLOR	BLACK
CONSISTENCY	GUN GRADE
HARDNESS	30-35 SHORE A ASTM C661
SHRINKAGE	NIL
TACK TIME	12-24 HOURS @ 75°F, 50% R.H.
PRACTICAL SERVICE RANGE	-20°F - +180°F
STORAGE TIME (@77°F)	6 MONTHS IN UNOPENED CONTAINER
TENSILE STRENGTH	160 PSI
ELONGATION	800%
PEEL ADHESION (CONCRETE)	25 LBS/IN.
PEEL ADHESION (NEOPRENE)	32 LBS/IN.

8. BEDDING TAPE SHALL BE USED AS A BEDDING COMPOUND AND ALL BUTT JOINTS SHALL BE SEALED WITH THREE (3) LAYERS OF BEDDING TAPE. IT IS USED TO CREATE A WEATHER SEAL BETWEEN TWO SURFACES. THE TAPE SHALL BE A PREFORMED GLAZING TAPE FURNISHED ON RELEASE PAPER ROLLS. THE PHYSICAL PROPERTIES SHALL MEET OR EXCEED:

BASE POLYMER	BUTYL RUBBER (POLYISOBUTYLENE)
SOLIDS CONTENT	100% SOLIDS (CONTAINS NO ASBESTOS)
CURE TIME	FULLY CURED BEFORE APPLICATION
HARDNESS	20 DUROMETER SHORE "A" @ 77°F
	70 DUROMETER SHORE "00" @ 77°F
	(RELATIVELY NON-COMPRESSIBLE)
TEMPERATURE RANGE	APPLICATION -10°F TO 120°F
JOINT MOVEMENT	SERVICE -45°F TO 190°F
	30% (+/- 15%) OF JOINT ACCOMODATION
SHELF LIFE	ONE-YEAR GUARANTEE
SERVICE LIFE	TWENTY-YEAR MINIMUM

E. INSPECTION

1. THE MANUFACTURER SHALL PROVIDE FULL TIME QUALITY CONTROL INSPECTION TO ENSURE THAT THE MATERIALS AND WORKMANSHIP MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE CONTRACT.
2. QUALITY CONTROL INSPECTION SHALL BE THE RESPONSIBILITY OF A QUALITY CONTROL GROUP, WHICH IS INDEPENDENT OF THE FABRICATION GROUP.

F. FABRICATION

1. THE ELASTOMERIC JOINT PANEL LAYOUT SHALL BE ARRANGED SUCH THAT STANDARD LENGTH PIECES ARE USED WHERE PRACTICABLE. PIECES AT PHASED CONSTRUCTION JOINTS SHALL BE AT LEAST 3'-0" LONG AND ANCHORED TO THE CONCRETE ON EACH SIDE BY A MINIMUM OF 3 ANCHORS.
2. WELDING DETAILS, PROCEDURES AND TESTING SHALL CONFORM TO THE AASHTO/AWS D1.5 (2010) BRIDGE WELDING CODE.

G. INSTALLATION

1. WHERE SPECIAL INSTRUCTIONS ARE NOT CONTAINED HEREIN OR ELSEWHERE IN THESE NOTES, DIRECTION FOR THE INSTALLATION SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE TECHNICAL REPRESENTATIVE.
2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE THE TECHNICAL REPRESENTATIVE.
3. THE COMPLETE, INSTALLED EXPANSION DEVICE SHALL BE TESTED FOR WATERTIGHTNESS BY FLOODING THE TOTAL EXPANSION JOINT LENGTH WITH WATER FOR A PERIOD NOT LESS THAN ONE HOUR. THE JOINT SYSTEM SHALL BE COVERED EITHER BY PONDED OR FLOWING WATER. SHOULD THE JOINT SYSTEM EXHIBIT ANY EVIDENCE OF WATER LEAKAGE, THE CONTRACTOR SHALL LOCATE THE POINTS OF LEAKAGE AND SHALL TAKE ANY AND ALL MEASURES NECESSARY TO STOP THE LEAKAGE. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. AFTER ALL REPAIRS HAVE BEEN MADE, AN ADDITIONAL TEST FOR WATERTIGHTNESS SHALL BE PERFORMED.

H. METHOD OF MEASUREMENT

THE DEPARTMENT WILL MEASURE THE JOINT SYSTEM BY THE NUMBER OF FEET ALONG THE JOINT CENTERLINE, EXTENDING FROM THE EDGE OF DECK TO EDGE OF DECK.

I. BASIS OF PAYMENT

PAYMENT WILL BE MADE AT CONTRACT BID PRICES PER FOOT OF JOINT SYSTEM INSTALLED AND ACCEPTED BY THE DEPARTMENT.

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RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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GENERAL NOTES - 2
BRIDGE NO. SUM-76-1365
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

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CALC: KAK DATE: 7/6/2015
 CHECKED: JLS DATE: 7/6/2015

ESTIMATED QUANTITIES (03/IMS/BR)

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SEE SHEET
201	11000	LUMP		CLEARING AND GRUBBING				LUMP	
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2/14
509	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN (PARAPET REPAIR)				100	1/14
509	20001	50	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN (JOINT REPLACEMENT)			50		2/14
509	25001	4230	LB	REINFORCING STEEL, AS PER PLAN			4230		2/14
510	10000	28	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT			28		
511	34445	33	CY	CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN			33		2/14
511	81100	50	FT	CONCRETE, MISC.:PARAPET REPAIR				50	1/14
512	10100	142	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			142		
512	10400	14420	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS			14420		
513	95020	LUMP		STRUCTURAL STEEL, MISC.:PREPARATION AND REINSTALLATION OF STEEL PARAPET COVER PLATES				LUMP	
516	14600	273	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.:LOW PROFILE JOINT SYSTEM				273	
SPEC	51910000	73	SY	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO- SILICA MODIFIED CONCRETE			73		
519	11101	300	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN				300	
SPEC	53000800	50	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL				50	1/14
630	02100	7.5	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				7.5	
630	80100	1	SF	SIGN, FLAT SHEET, 730.20				1	
630	84900	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				1	
843	50000	200	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR				200	

NOTES

JOINT REPLACEMENT QUANTITIES ARE CONSIDERED ALL SUPERSTRUCTURE QUANTITIES, ALTHOUGH WORK IS BEING DONE ON THE ABUTMENTS.

RICHLAND ENGINEERING LIMITED
 29 NORTH PARK STREET
 MANSFIELD, OHIO 44902

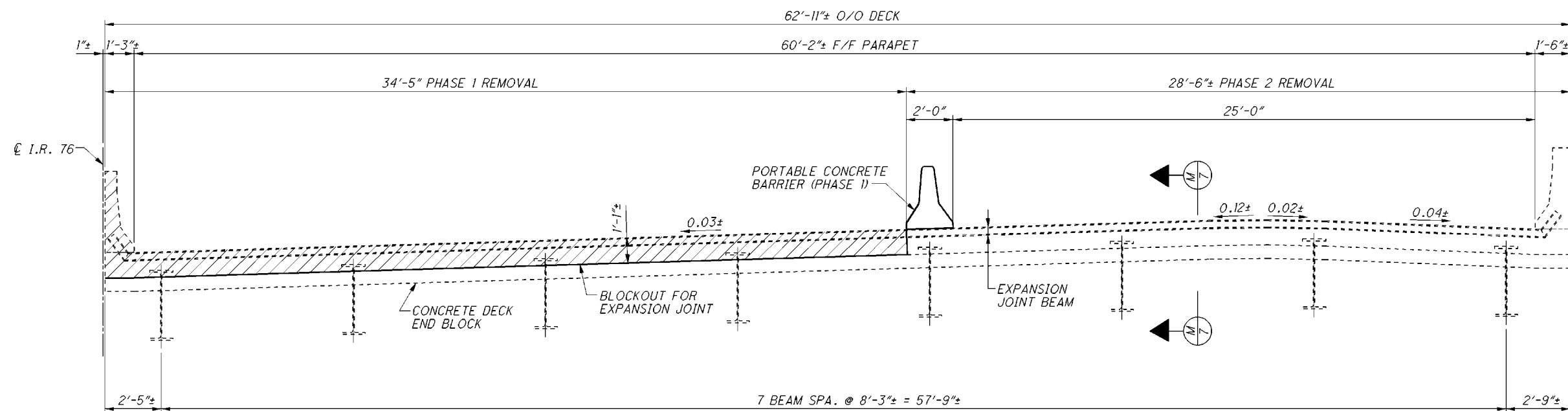
REVIEWED DATE 7/20/15
 DAP
 STRUCTURE FILE NUMBER 7706456

DRAWN JLS
 CHECKED KAK

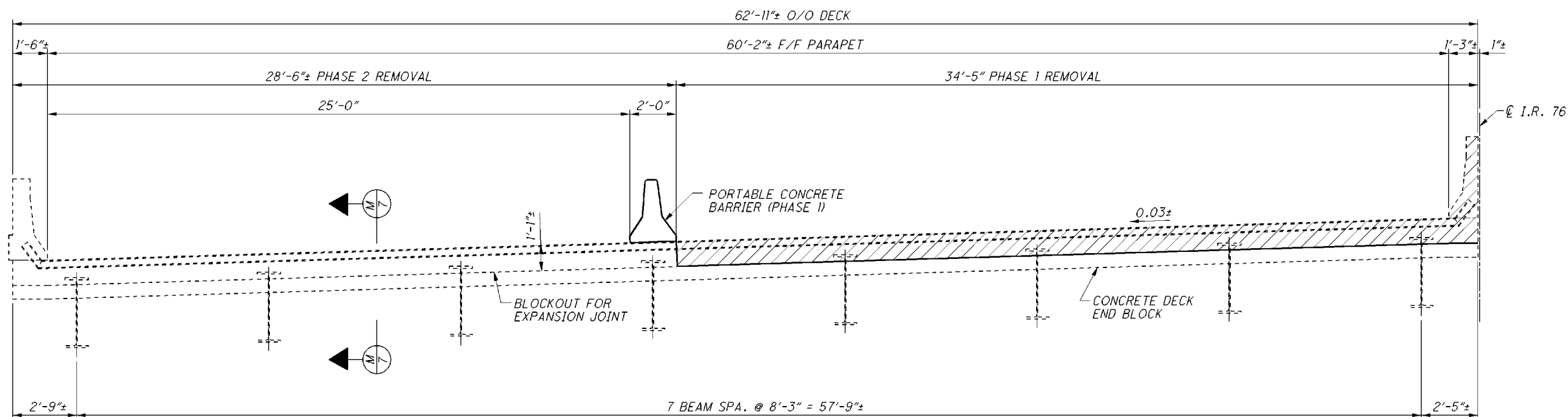
ESTIMATED QUANTITIES
 BRIDGE NO. SUM-76-1355
 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-VAR/11.72
 PID No. 77876
 4/14
 93/103

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REAR ABUTMENT EXPANSION JOINT WESTBOUND LANE
(LOOKING BACK)



REAR ABUTMENT EXPANSION JOINT EASTBOUND LANE
(LOOKING BACK)

LEGEND

 ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN. (PHASE 1 REMOVAL SHOWN - PHASE 2 REMOVAL SIMILAR)

NOTES

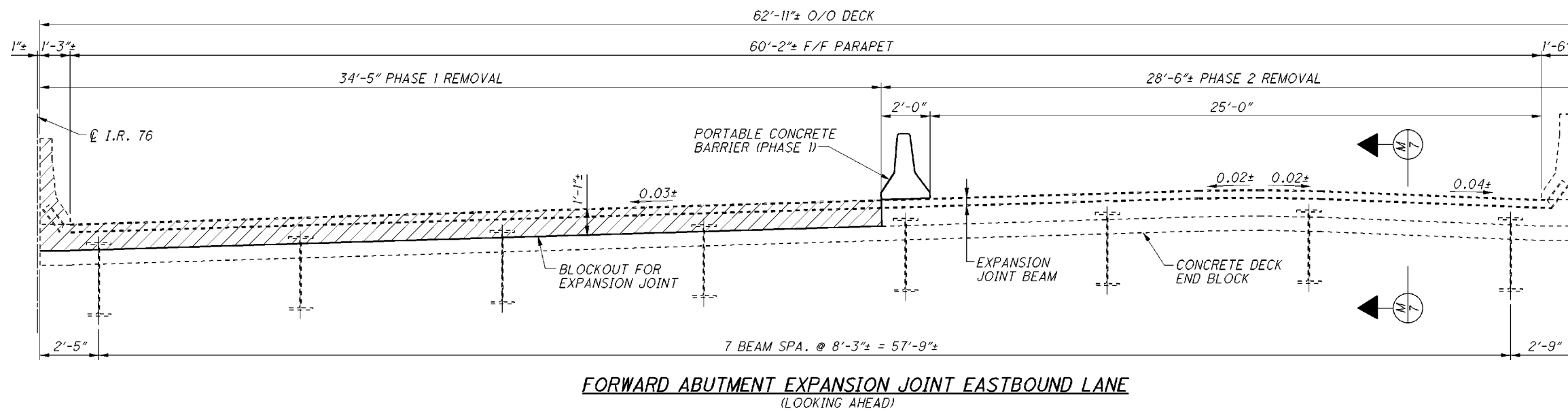
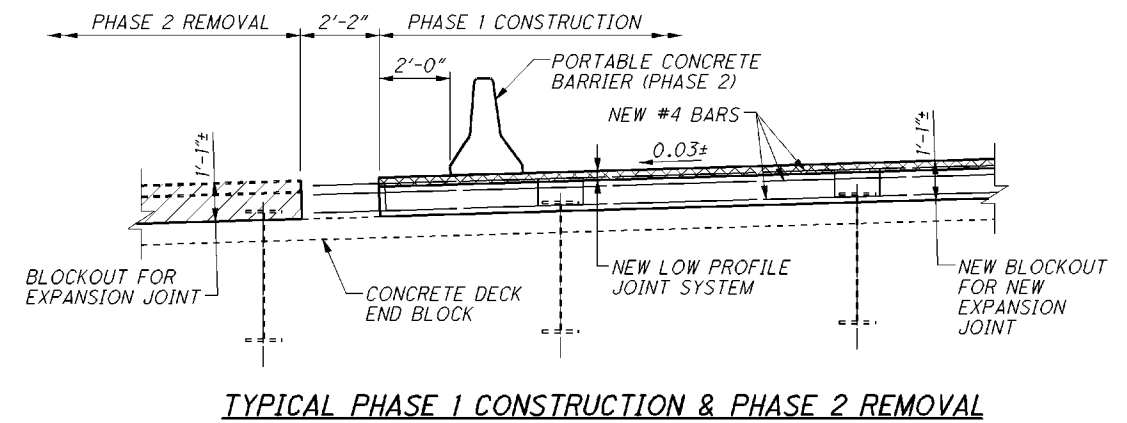
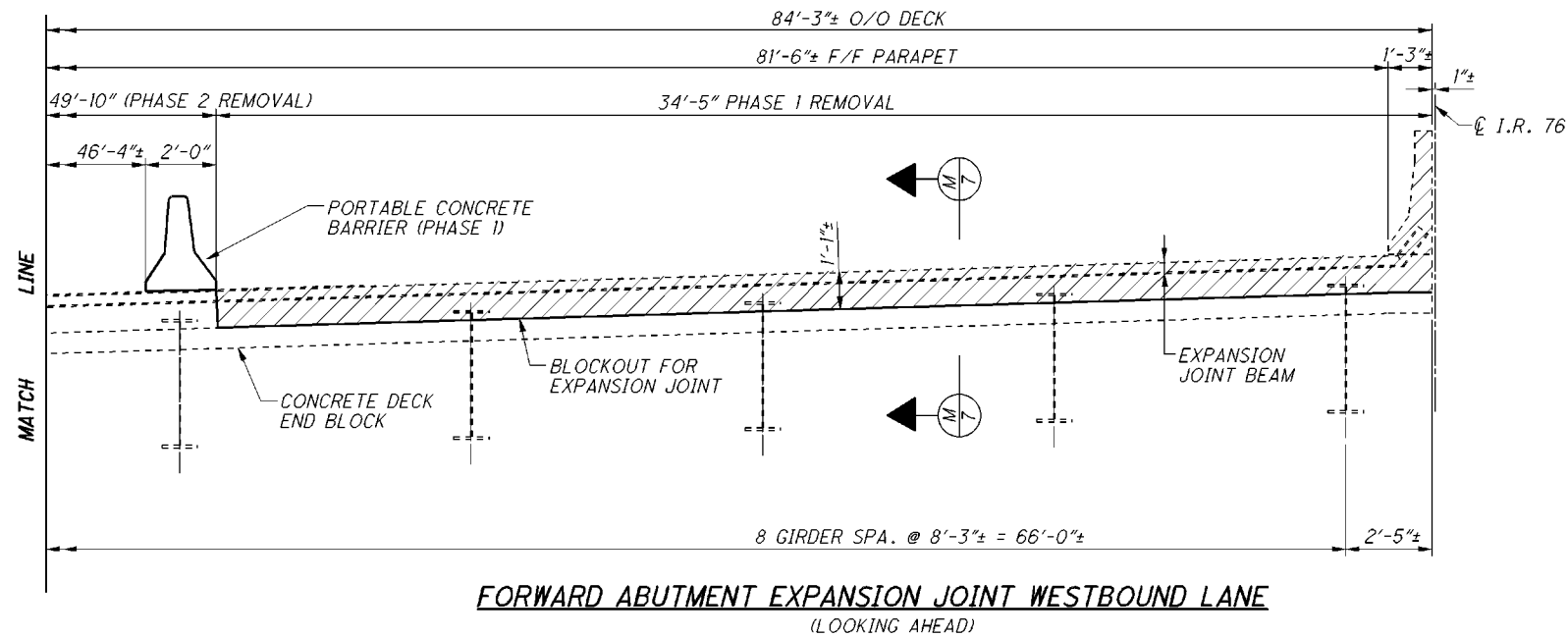
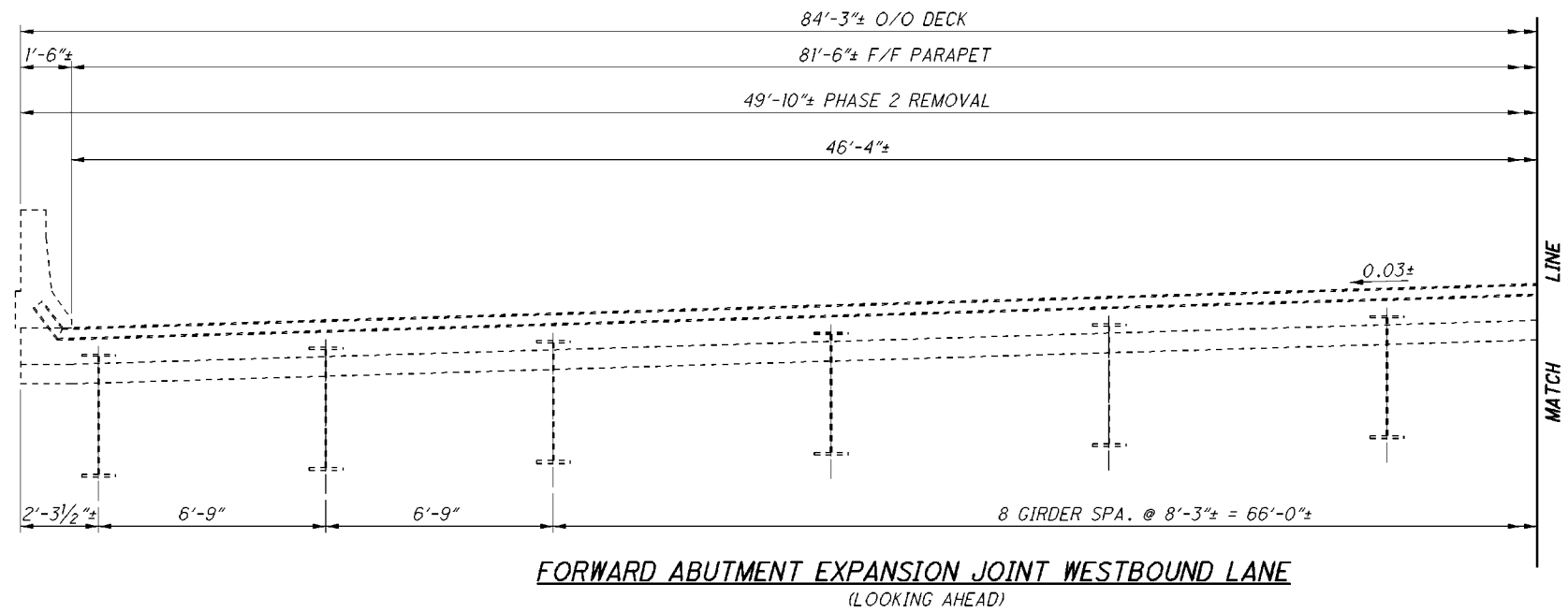
MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

PHASE 1 REMOVAL DETAILS SHOWN.

TYPICAL PHASE 1 CONSTRUCTION & PHASE 2 REMOVAL DETAIL: SEE SHEET 6/14.

<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>	
<p>REVIEWED DAP</p>	<p>DATE 7/20/15</p>
<p>DESIGNED BLN</p>	<p>STRUCTURE FILE NUMBER 7706456</p>
<p>DRAWN SJK</p>	<p>REVISED</p>
<p>CHECKED KAK</p>	<p>REVISIONS</p>
<p>REAR ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION</p>	
<p>BRIDGE NO. SUM-76-1355 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD</p>	
<p>SUM-76/241- VAR/11.72</p>	<p>PID No. 77876</p>
<p>5 / 14</p>	<p>94 103</p>

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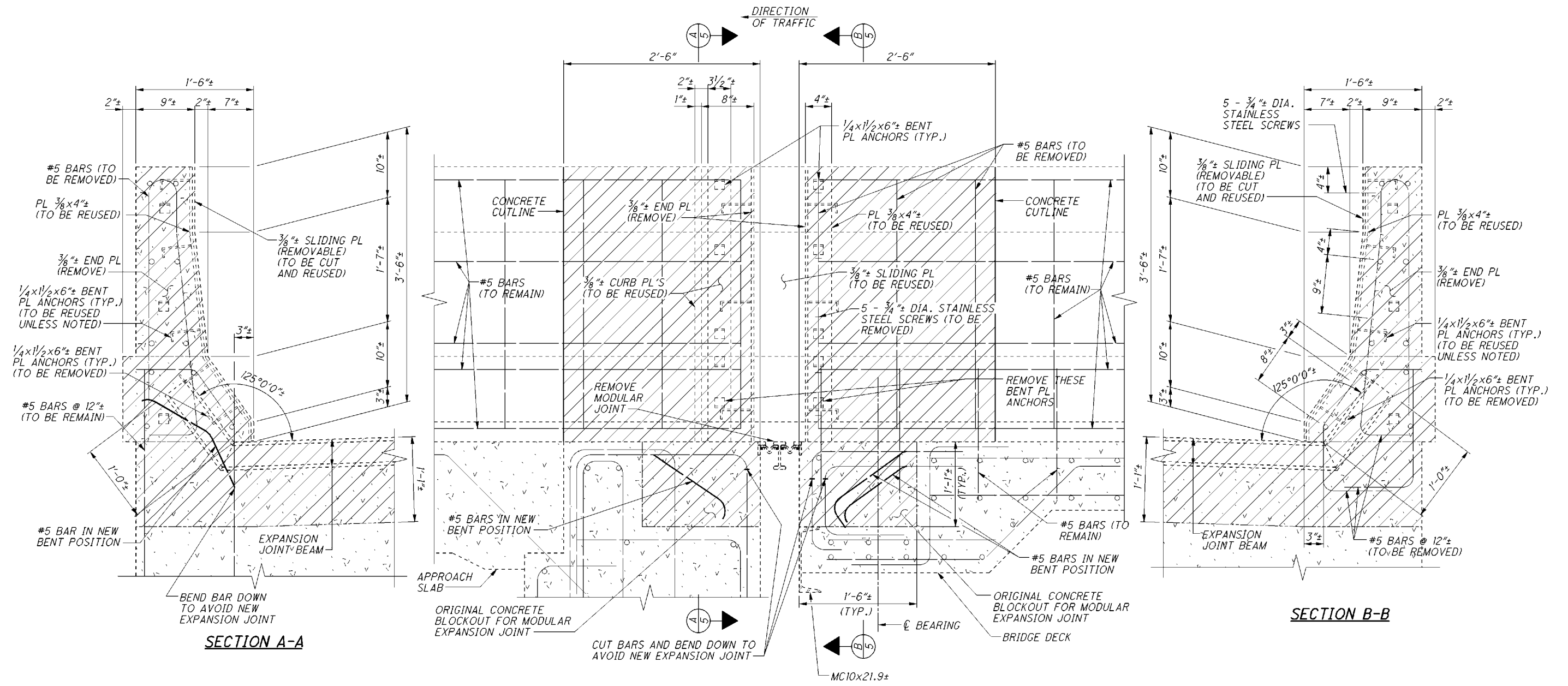
- LEGEND**
- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (PHASE 1 REMOVAL SHOWN - PHASE 2 REMOVAL SIMILAR)
 - NEW LOW PROFILE JOINT SYSTEM.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902	
REVIEWED DAP	DATE 7/20/15
DRAWN JLS	STRUCTURE FILE NUMBER 7706456
DESIGNED BLN	CHECKED KAK
FORWARD ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION BRIDGE NO. SUM-76-1355 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD	
SUM-76/241- VAR/11.72	PID No. 77876
6 / 14	95 / 103

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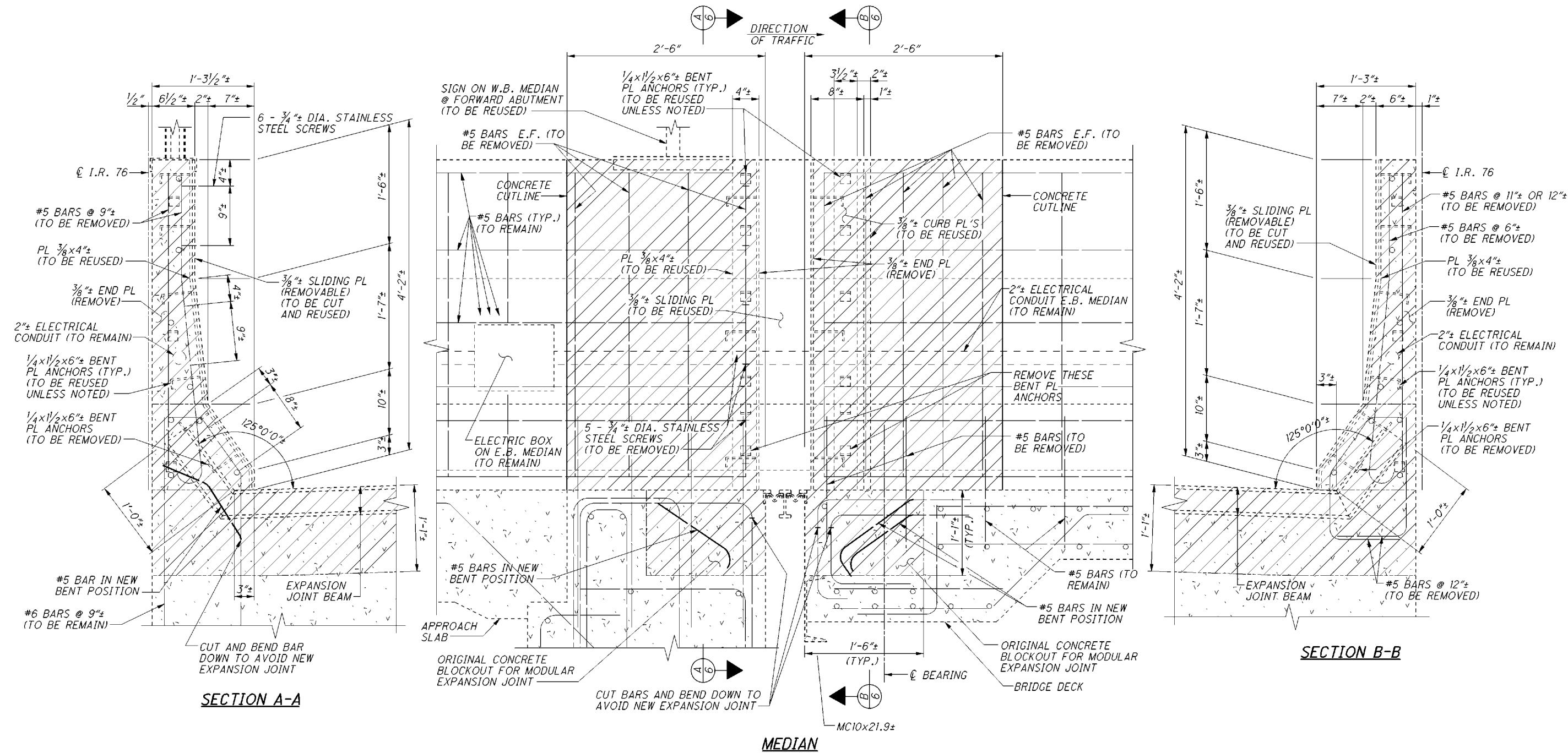


INDICATES MATERIALS TO BE REMOVED - PER ITEM 202-PORIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

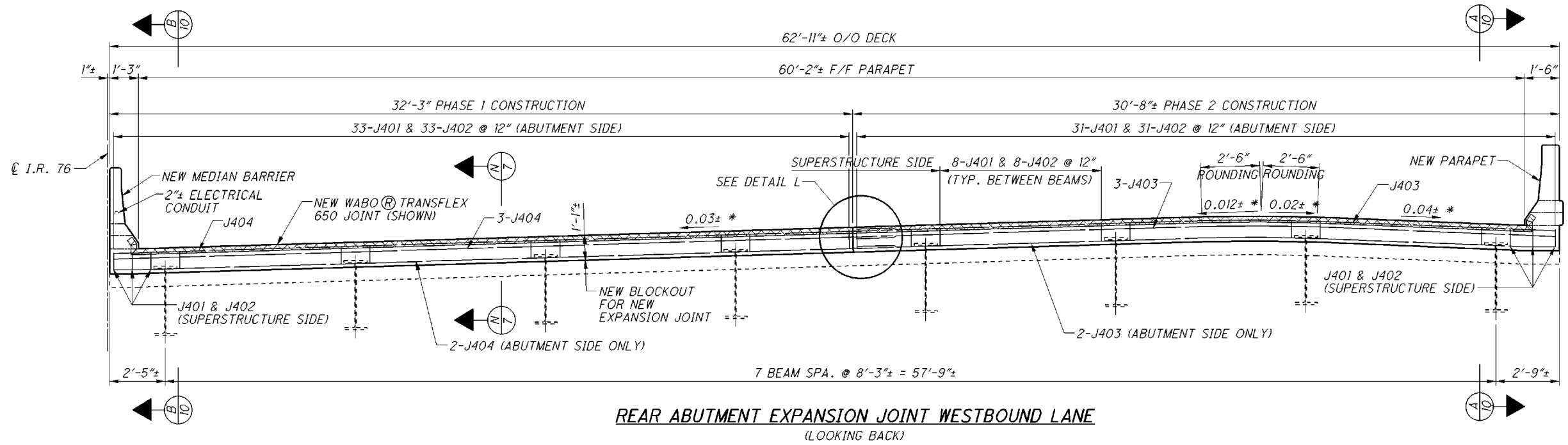
NOTES
MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SUM-76/241-VAR/11.72 PID No. 77876	EXTERIOR PARAPET EXPANSION JOINT REMOVAL DETAILS		RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
	BRIDGE NO. SUM-76-1355 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD	DATE 7/20/15	DRAWN SUK
7/14	CHECKED KAK	DESIGNED BLN	STRUCTURE FILE NUMBER 7706456
96 103			

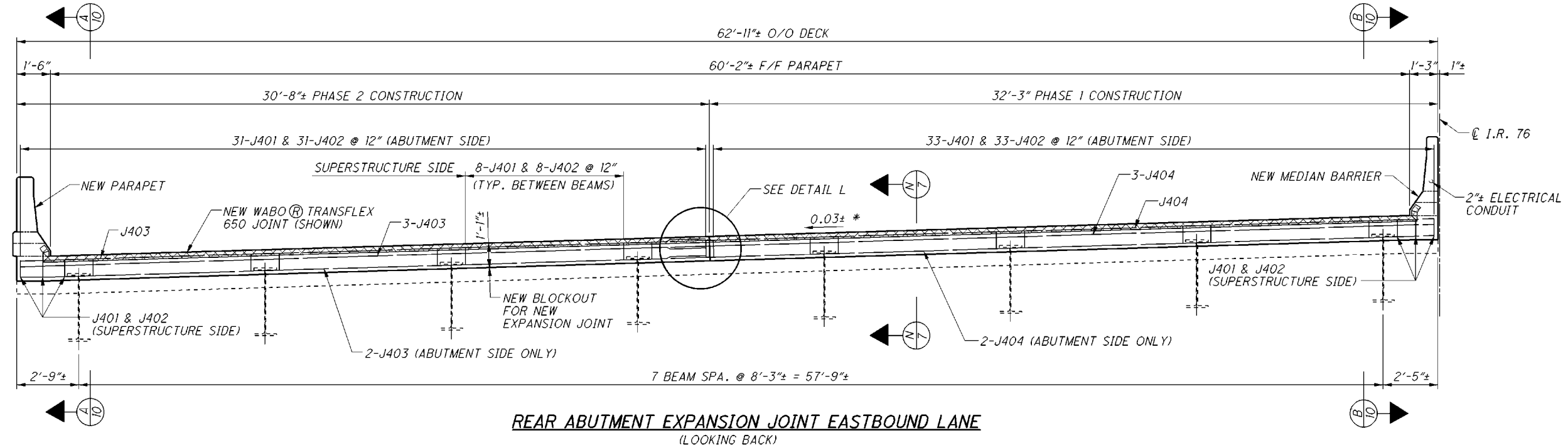
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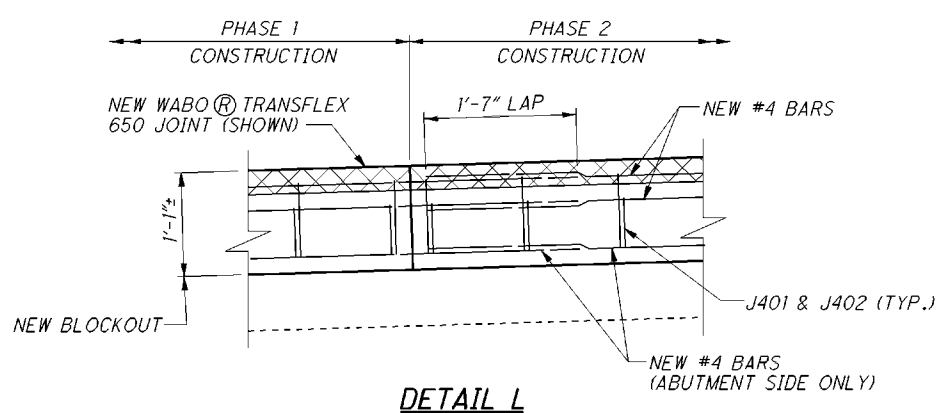
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REAR ABUTMENT EXPANSION JOINT WESTBOUND LANE
(LOOKING BACK)



REAR ABUTMENT EXPANSION JOINT EASTBOUND LANE
(LOOKING BACK)



DETAIL L

LEGEND

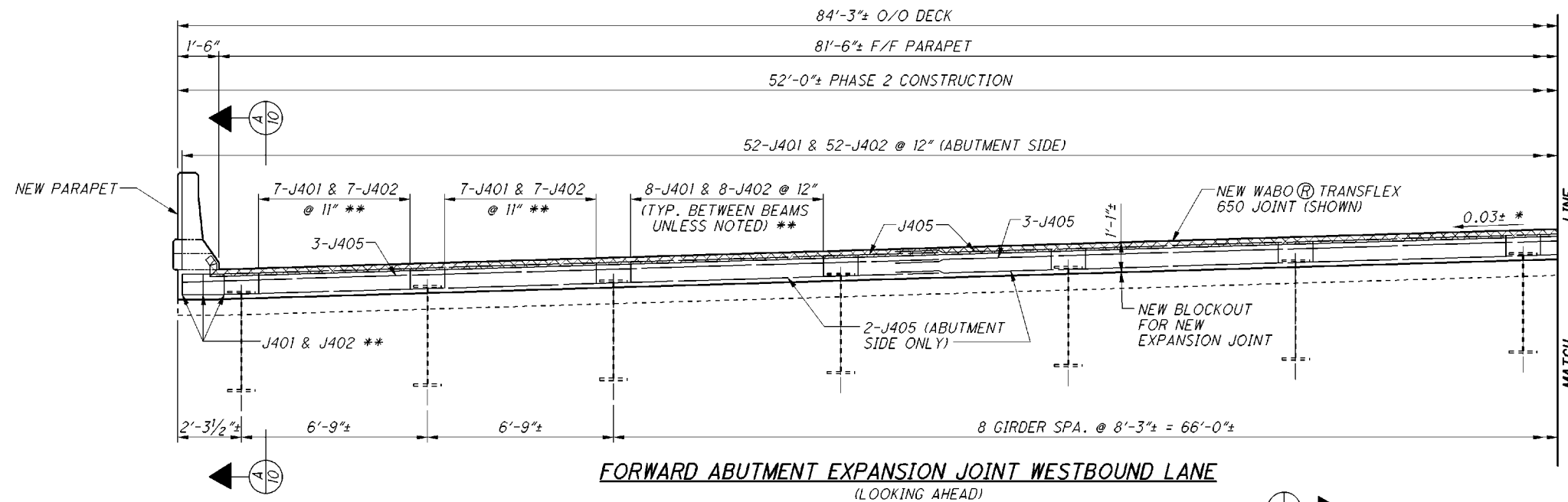
- NEW LOW PROFILE JOINT SYSTEM.
- * CONTRACTOR TO FIELD VERIFY CROSS SLOPES AND ROUNDING BEFORE FABRICATION OF NEW LOW PROFILE JOINT SYSTEM.

NOTES

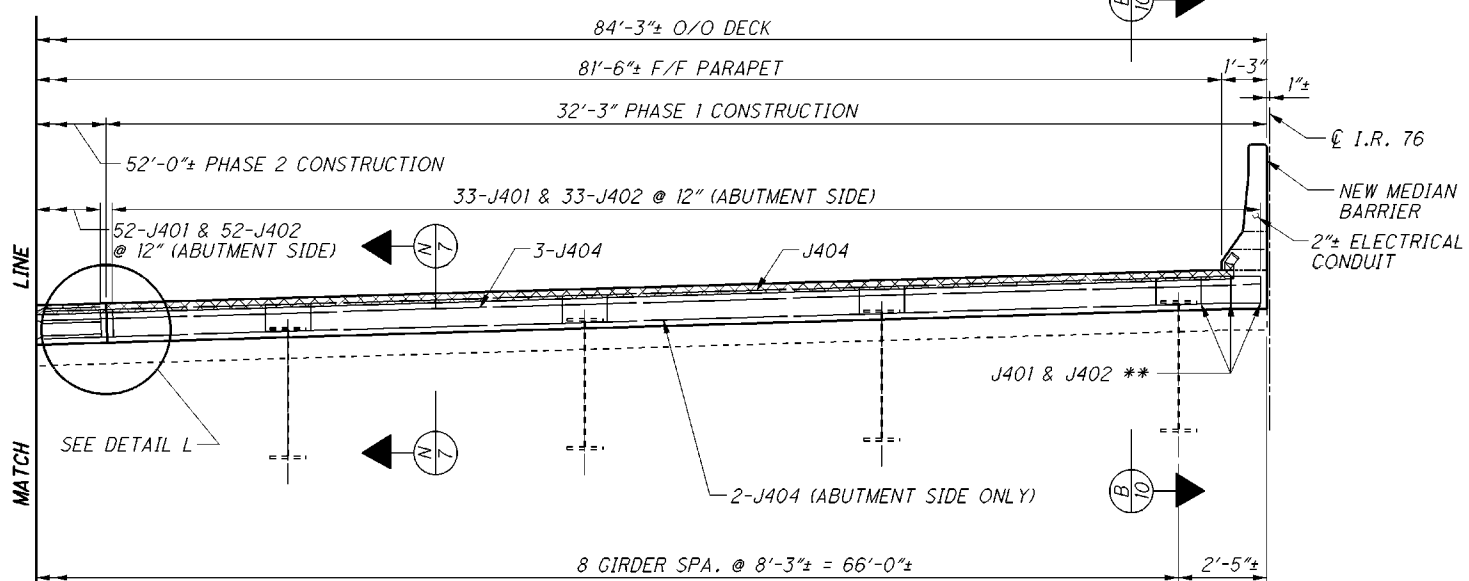
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
- REINFORCING STEEL** WITH THE LETTER DESIGNATION "J" IS NEW REINFORCING STEEL.
- REINFORCING STEEL SPLICE LENGTHS** SHALL BE 1'-7" FOR HORIZONTAL #4 BARS.
- NEW PARAPET:** FOR DETAILS AND REINFORCING STEEL SEE SHEET 13/14.
- NEW MEDIAN BARRIER:** FOR DETAILS AND REINFORCING STEEL SEE SHEET 13/14.

<p>SUM-76/241-VAR/11.72 PID No. 77876</p>	<p>BRIDGE NO. SUM-76-1355 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD</p>	<p>REAR ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION</p>	<p>DATE: 7/20/15 REVIEWED: DAP DRAWN: SJK DESIGNED: BLN CHECKED: KAK</p>	<p>DATE: 7/20/15 REVIEWED: DAP DRAWN: SJK DESIGNED: BLN CHECKED: KAK</p>	<p>FILE NUMBER: 7706456 PROJECT: 29 NORTH PARK STREET LOCATION: MANSFIELD, OHIO 44902</p>
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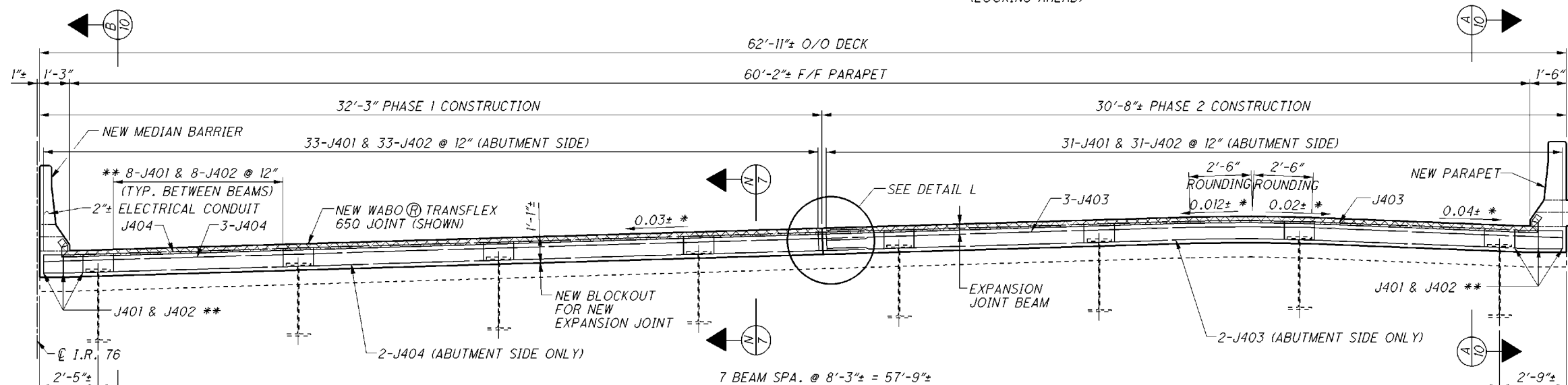
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FORWARD ABUTMENT EXPANSION JOINT WESTBOUND LANE
(LOOKING AHEAD)



FORWARD ABUTMENT EXPANSION JOINT WESTBOUND LANE
(LOOKING AHEAD)



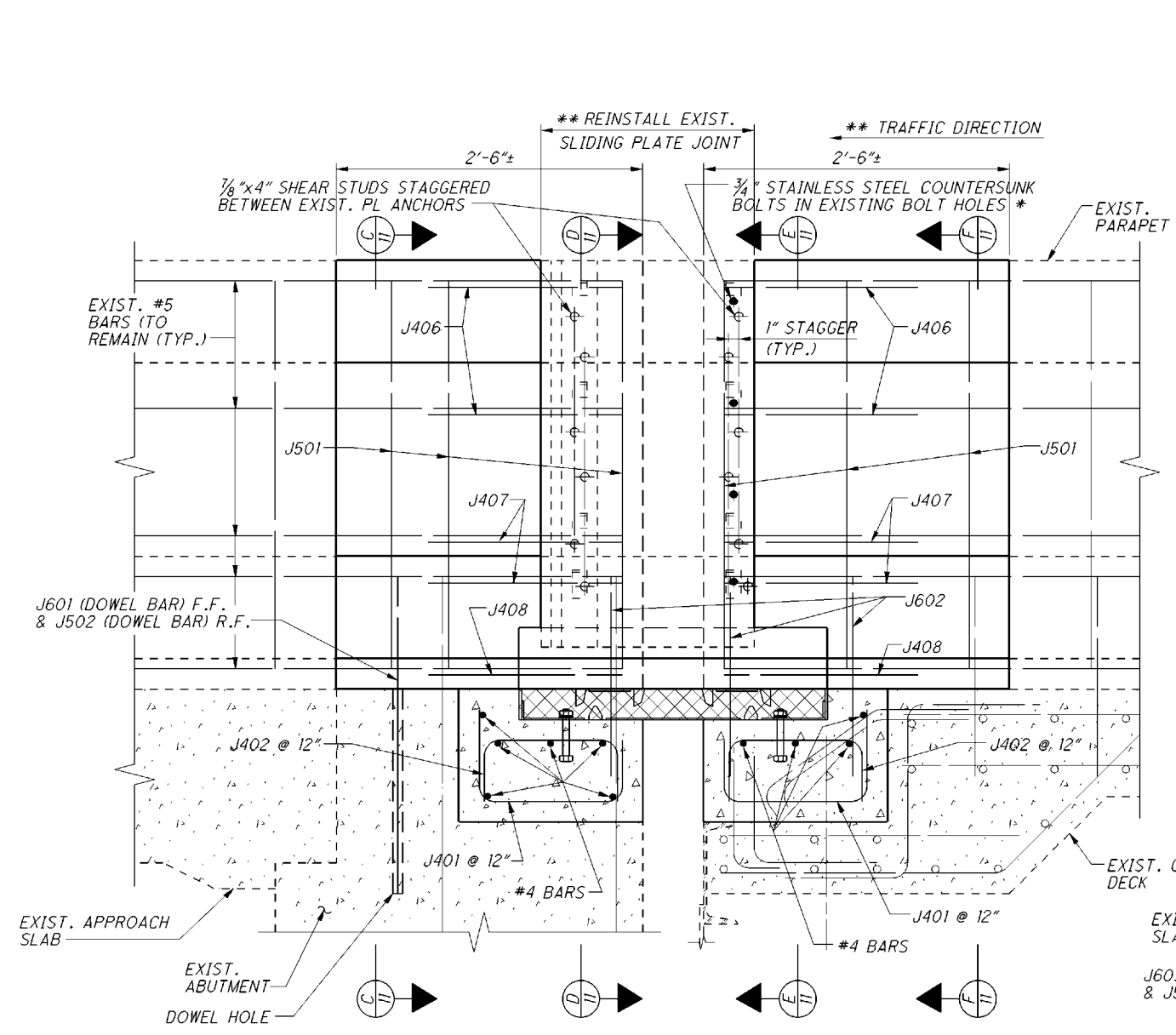
FORWARD ABUTMENT EXPANSION JOINT EASTBOUND LANE
(LOOKING AHEAD)

- LEGEND**
- NEW LOW PROFILE JOINT SYSTEM.
 - * CONTRACTOR TO FIELD VERIFY CROSS SLOPES AND ROUNDING BEFORE FABRICATION OF LOW PROFILE JOINT SYSTEM.
 - ** SUPERSTRUCTURE SIDE

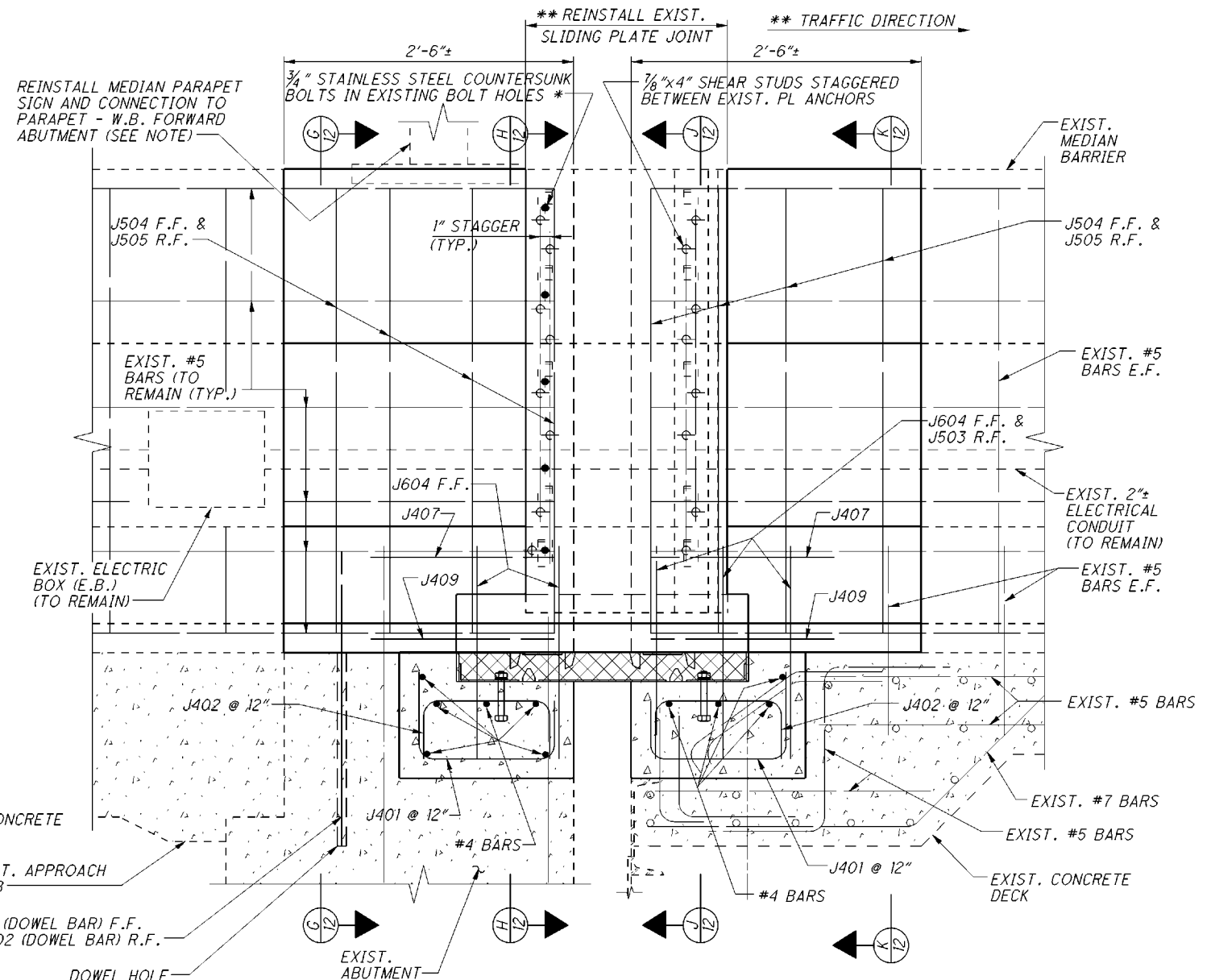
- NOTES**
- MATERIALS** SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.
 - DETAIL L:** SEE SHEET 10/14.
 - ADDITIONAL NOTES:** SEE SHEET 10/14.

<p>SUM-76/241-VAR/11.72 PID No. 77876</p>	<p>FORWARD ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION</p> <p>BRIDGE NO. SUM-76-1355 OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD</p>	<p>RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902</p>
<p>DESIGNED BLN</p> <p>CHECKED KAK</p>	<p>DRAWN SJK</p> <p>REVIEWED DAP</p>	<p>REVIEWED DATE 7/20/15</p> <p>STRUCTURE FILE NUMBER 7706456</p>

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SECTION A-A
 (AT OUTSIDE PARAPET)
 REAR ABUTMENT WESTBOUND (SHOWN)
 REAR ABUTMENT EASTBOUND (OPPOSITE HAND)
 FORWARD ABUTMENT WESTBOUND (OPPOSITE HAND)
 FORWARD ABUTMENT EASTBOUND (SHOWN)



SECTION B-B
 (AT MEDIAN BARRIER)
 REAR ABUTMENT WESTBOUND (OPPOSITE HAND)
 REAR ABUTMENT EASTBOUND (SHOWN)
 FORWARD ABUTMENT WESTBOUND (SHOWN)
 FORWARD ABUTMENT EASTBOUND (OPPOSITE HAND)

LEGEND

 NEW LOW PROFILE JOINT SYSTEM.

- * ADJUST LOCATION OF SHEAR STUDS AS NECESSARY TO MISS STAINLESS STEEL COUNTERSUNK BOLTS.
- ** EXISTING SLIDING PLATES TO BE REINSTALLED IN THE SAME CONFIGURATION AS THE EXISTING, WITH THE SLIDING SURFACES BETWEEN PLATES ON THE TRAILING END OF THE JOINT OPENING.

NOTES

MATERIALS SHOWN ARE NEW UNLESS OTHERWISE NOTED.

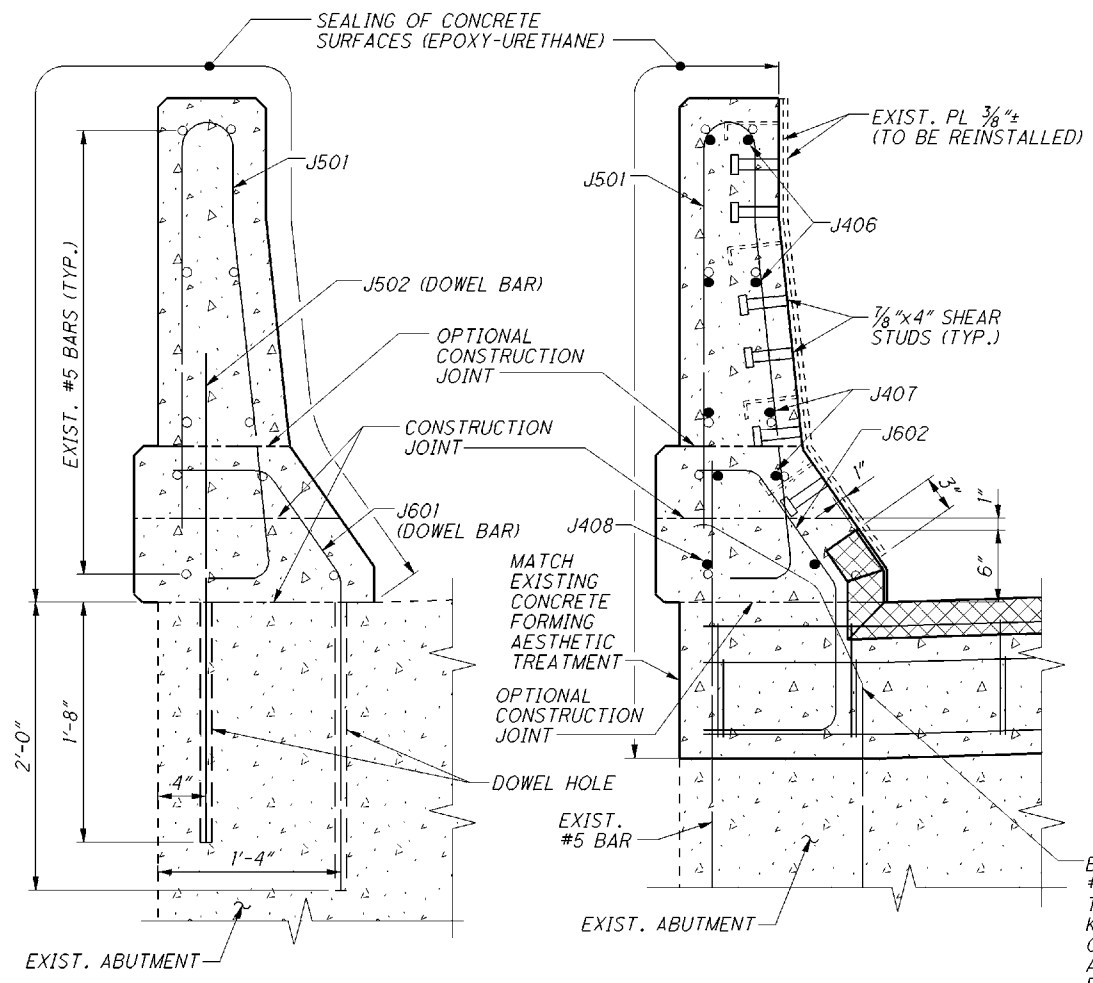
NOTATION: F.F. - FRONT FACE W.B. - WESTBOUND
 R.F. - REAR FACE E.B. - EASTBOUND
 E.F. - EACH FACE

SECTIONS A-A & B-B: FOR LOCATIONS SEE SHEETS 10/14 AND 11/14.

SIGN REMOVAL & REINSTALLATION: CAREFULLY REMOVE, STORE AND REINSTALL BRIDGE END MARKER SIGN AND SUPPORT. PROVIDE A CONNECTION TO THE PARAPET MATCHING THE EXISTING CONNECTION AND TO THE SATISFACTION OF THE ENGINEER. THE WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL PAYMENT SHALL BE MADE.

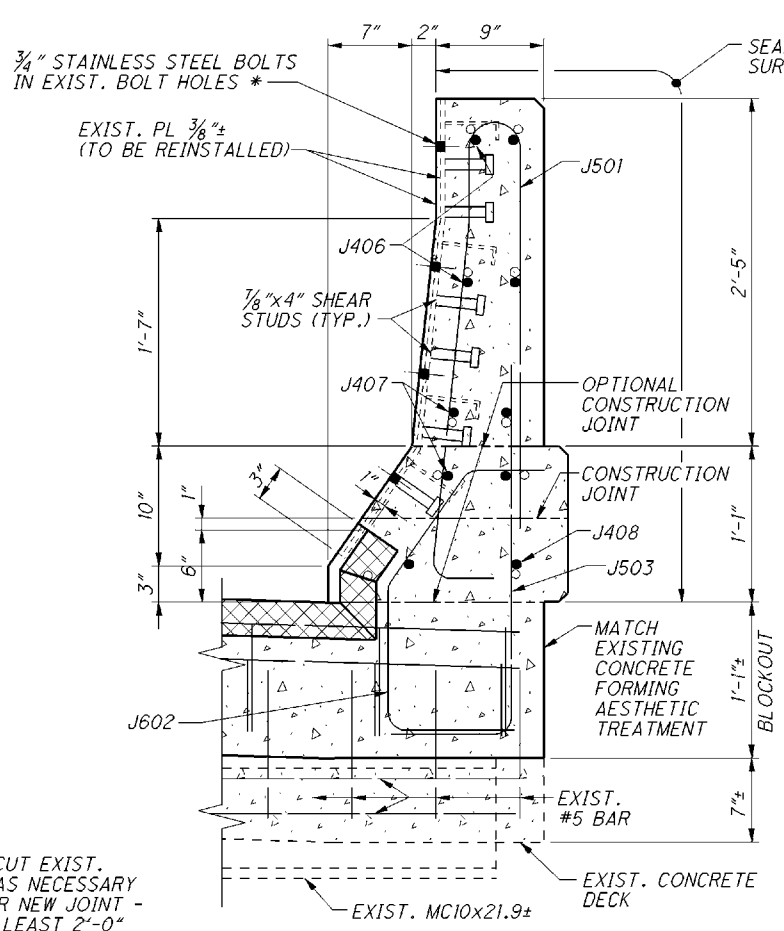
ADDITIONAL NOTES: SEE SHEET 10/14.

EXPANSION JOINT DETAILS - 1	DATE 7/20/15	REVIEWED DAP	DRAWN JLS	DESIGNED BLN	CHECKED KAK	REVISIONS REVISED	STRUCTURE FILE NUMBER 7706456	
SUM-76/241-VAR/11.72	BRIDGE NO. SUM-76-1355						OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
PID No. 77876	101						12/14	103

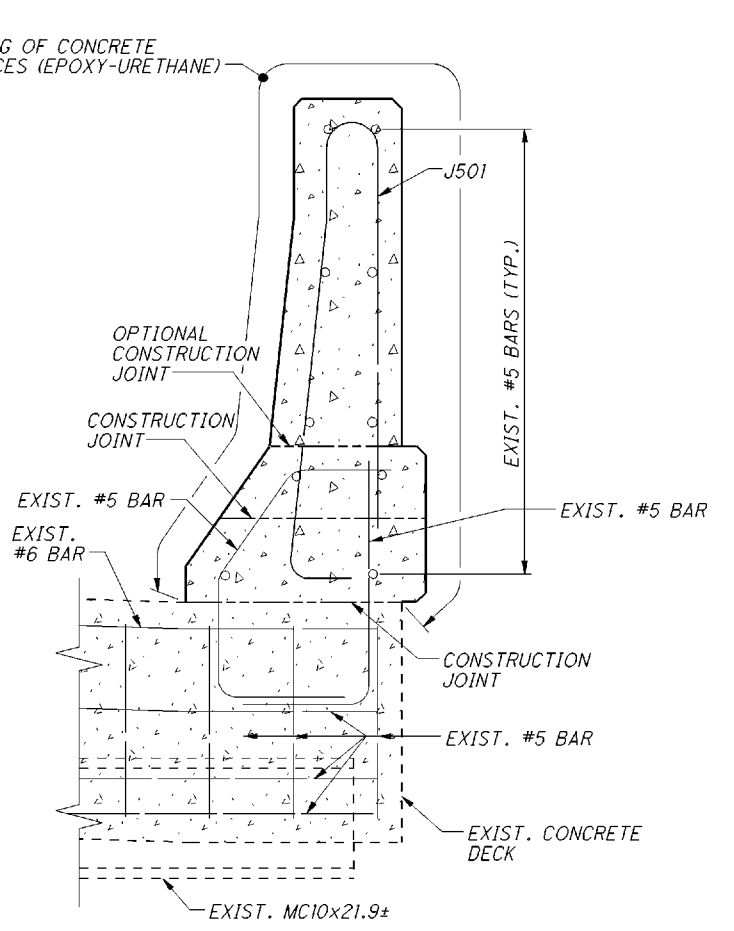


SECTION C-C

SECTION D-D



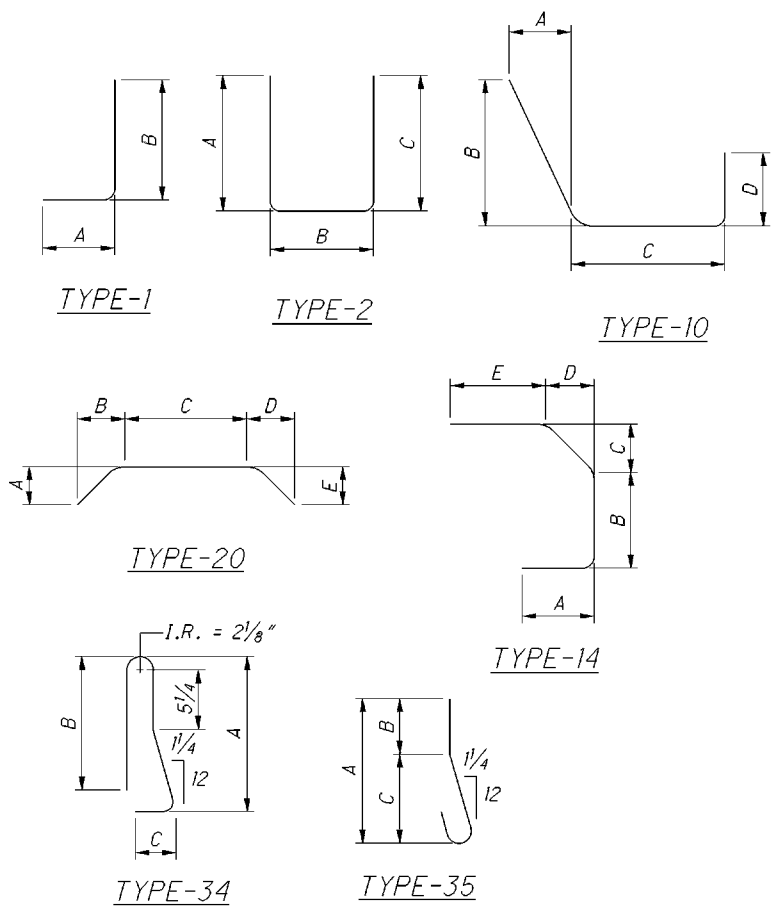
SECTION E-E



SECTION F-F

BEND & CUT EXIST. #6 BAR AS NECESSARY TO CLEAR NEW JOINT - KEEP AT LEAST 2'-0" OF BAR PROTRUDING ABOVE BOTTOM OF BLOCKOUT

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	REAR	FWD.	TOTAL				A	B	C	D	E	R
EXPANSION JOINTS												
J401	252	295	547	2'-3"	822	2	0'-6"	1'-2"	0'-9"			
J402	252	295	547	2'-0"	731	2	0'-6"	1'-2"	0'-6"			
J403	20	10	30	30'-4"	608	STR						
J404	20	20	40	33'-10"	904	STR						
J405		20	20	26'-8"	356	STR						
J406	8	8	16	3'-3"	35	2	1'-7"	0'-4"	1'-7"			
J407	12	12	24	3'-4"	53	2	1'-7"	0'-5"	1'-7"			
J408	4	4	8	3'-8"	20	2	1'-7"	0'-9"	1'-7"			
J409	4	4	8	3'-6"	19	2	1'-7"	0'-7"	1'-7"			
J501	12	12	24	6'-10"	171	34	3'-3"	3'-0"	0'-7 1/2"			
J502	2	2	4	3'-4"	14	STR						
J503	6	6	12	3'-4"	42	1	0'-11"	2'-6"				
J504	16	16	32	4'-6"	150	35	3'-11"	1'-4"	2'-7"			
J505	16	16	32	3'-10"	128	STR						
J601	2	2	4	3'-7"	22	20	1'-3"	1'-9 1/2"	0'-10 3/4"	0'-4"	0'-5 3/4"	
J602	6	6	12	3'-1"	56	14	0'-11"	1'-0 1/2"	0'-9 1/2"	0'-6 3/4"	0'-4 1/4"	
J603	2	2	4	3'-5"	21	20	1'-3"	1'-9 1/2"	0'-10 1/2"	0'-3"	0'-4"	
J604	10	10	20	2'-7"	78	10	0'-9 1/2"	0'-8"	1'-0 1/2"	0'-8"		
TOTAL					4230							



BENDING DIAGRAMS

LEGEND

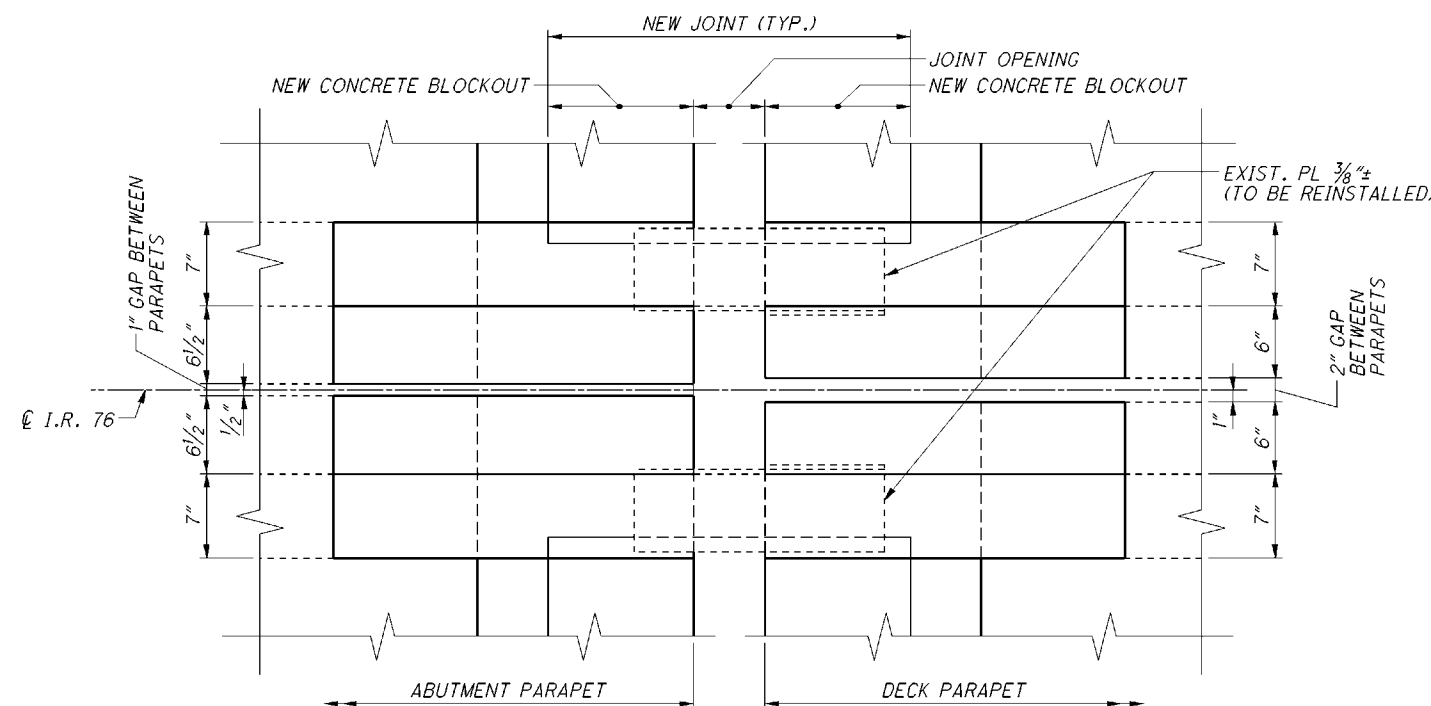
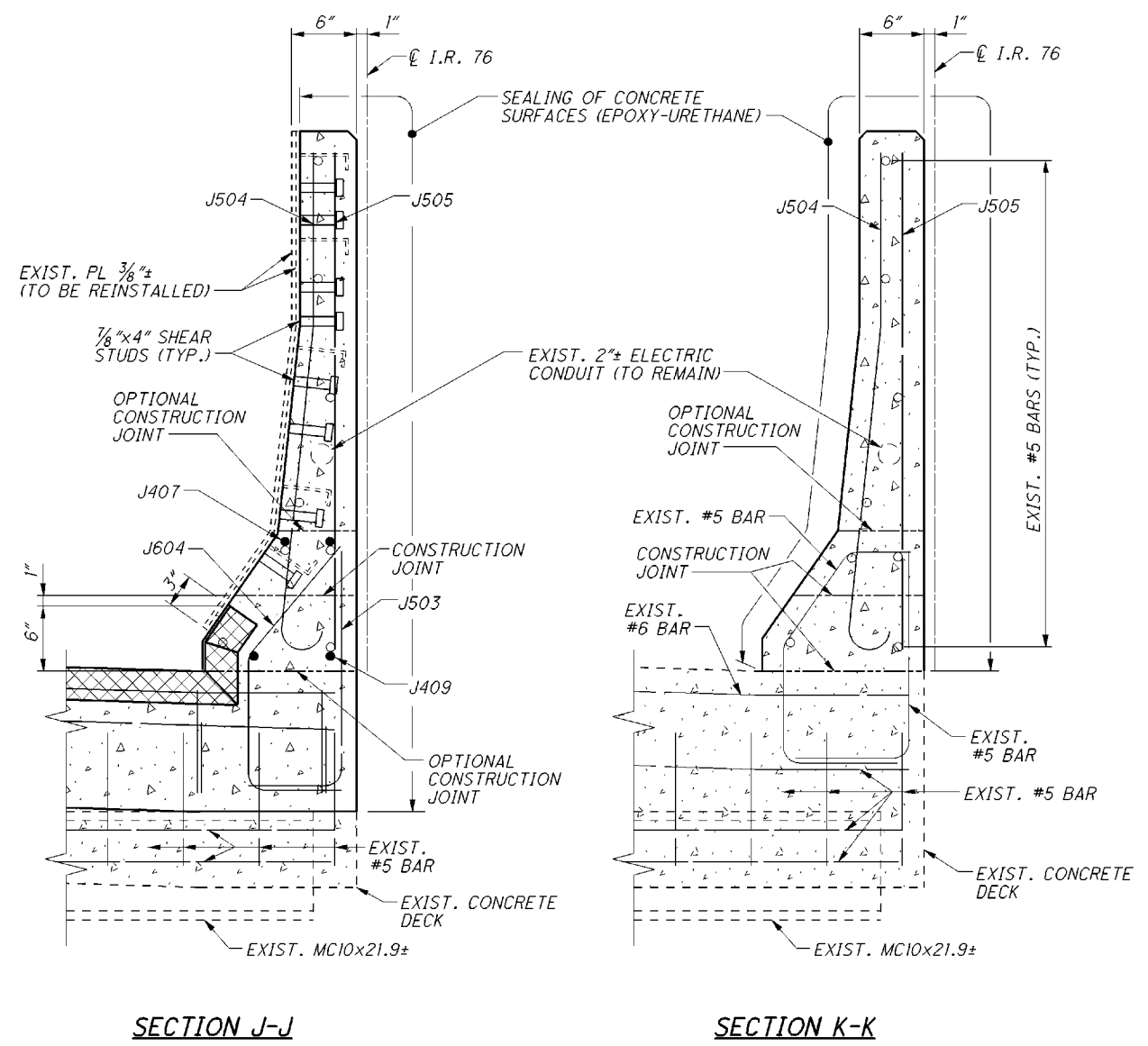
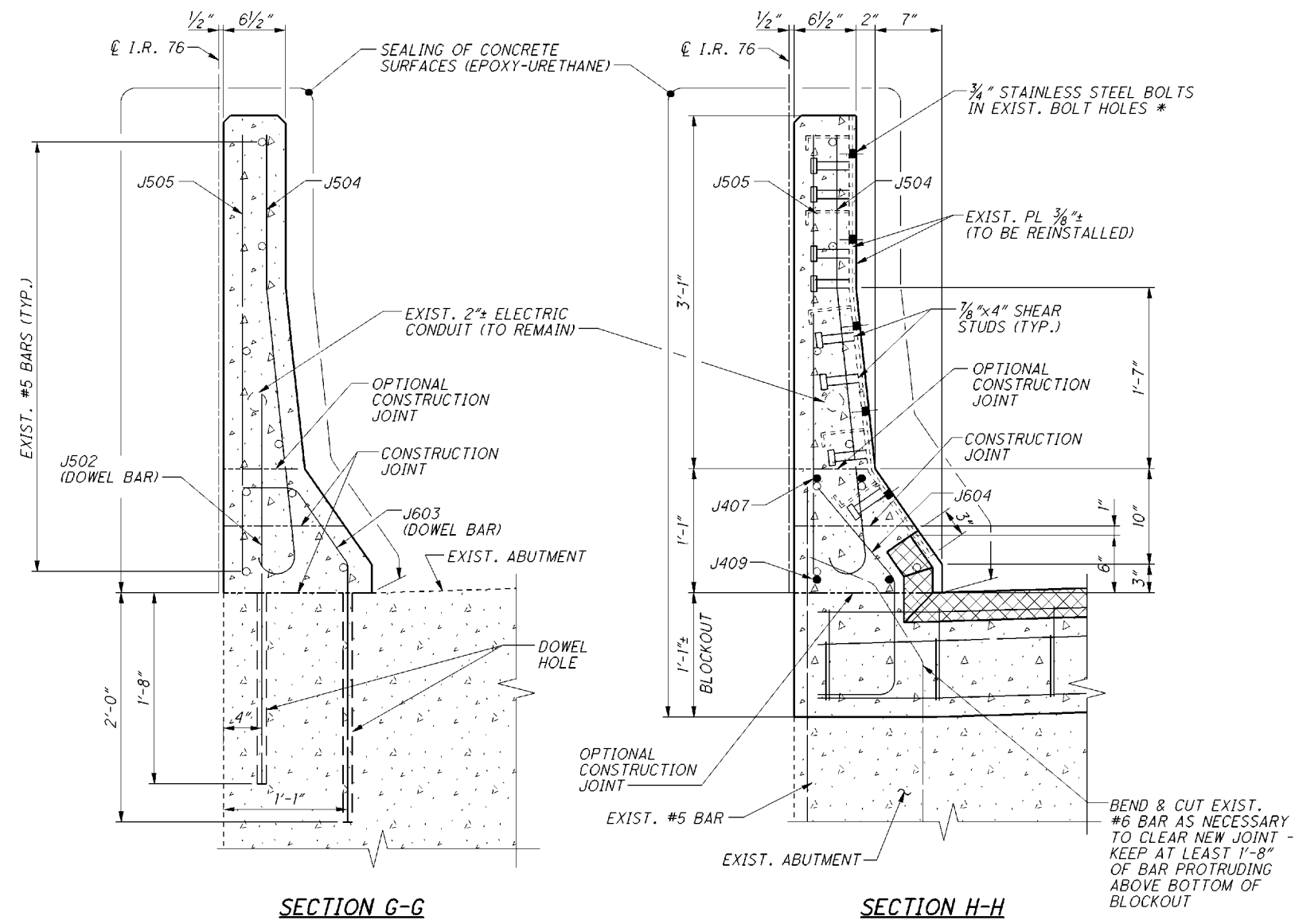
NEW LOW PROFILE JOINT SYSTEM.
* ADJUST LOCATION OF SHEAR STUDS AS NEEDED TO MISS STAINLESS STEEL BOLTS.

NOTES

MATERIALS SHOWN ARE NEW UNLESS NOTED OTHERWISE.
SECTIONS C-C, D-D, E-E & F-F: FOR LOCATIONS SEE SHEET [12/14].
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST LETTER IDENTIFIES BAR LOCATION, THE NEXT DIGIT INDICATES THE BAR SIZE DESIGNATION. THE REMAINING DIGITS STATE THE SEQUENCE NUMBER.
EXAMPLE: A511
A = LOCATION OF THE BAR IN STRUCTURE (ABUTMENT)
5 = BAR SIZE DESIGNATION
11 = SEQUENCE NUMBER
BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
ALL REINFORCING STEEL TO BE EPOXY COATED, PER CMS 709.00.
ADDITIONAL NOTES: SEE SHEET [9/14].

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LEGEND

NEW LOW PROFILE JOINT SYSTEM.

* ADJUST LOCATION OF SHEAR STUDS AS NEEDED TO MISS STAINLESS STEEL BOLTS.

NOTES

MATERIALS SHOWN ARE NEW UNLESS NOTED OTHERWISE.

SECTIONS G-G, H-H, J-J & K-K: FOR LOCATIONS SEE SHEET 12/14.

ADDITIONAL NOTES: SEE SHEET 9/14.